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Issued by the Agricultural Department.

EDITED BY J. CAMERON.

VOL. VI.—No. 1.]

OCTOBER, 1908.

[5s. per annum.



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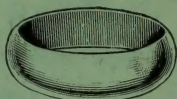
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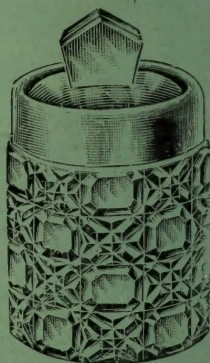
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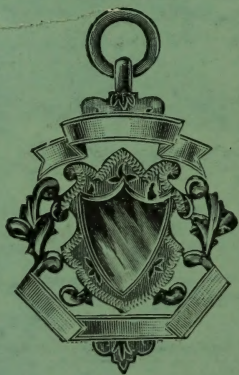
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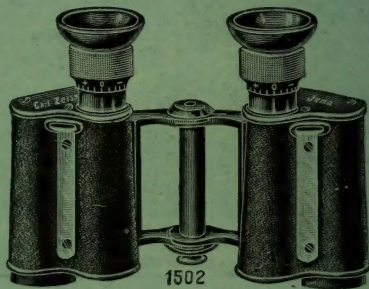
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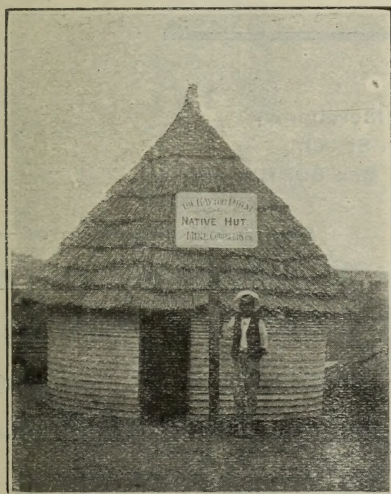
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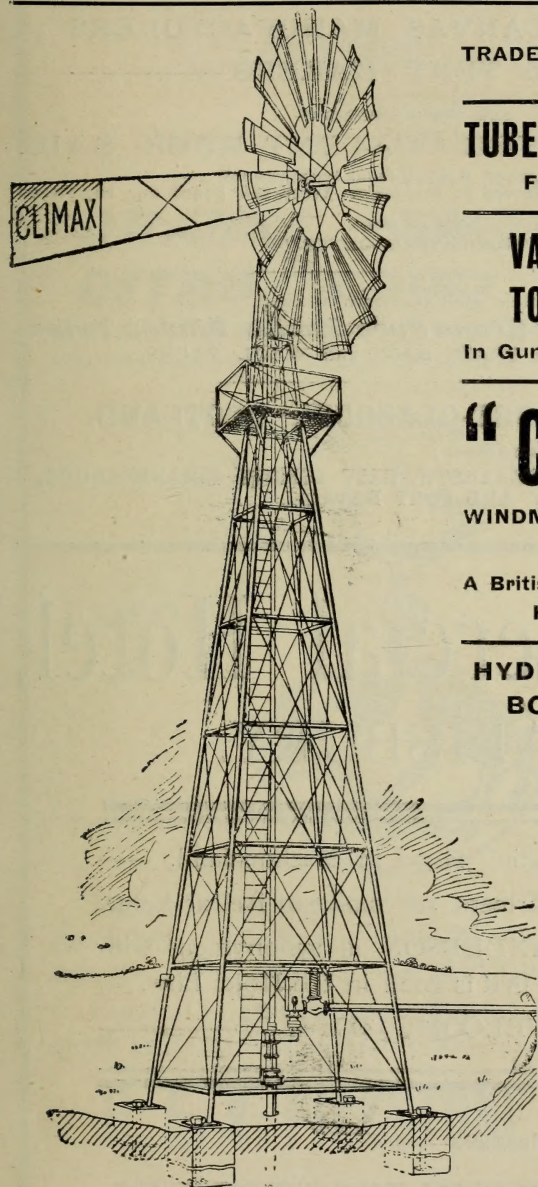
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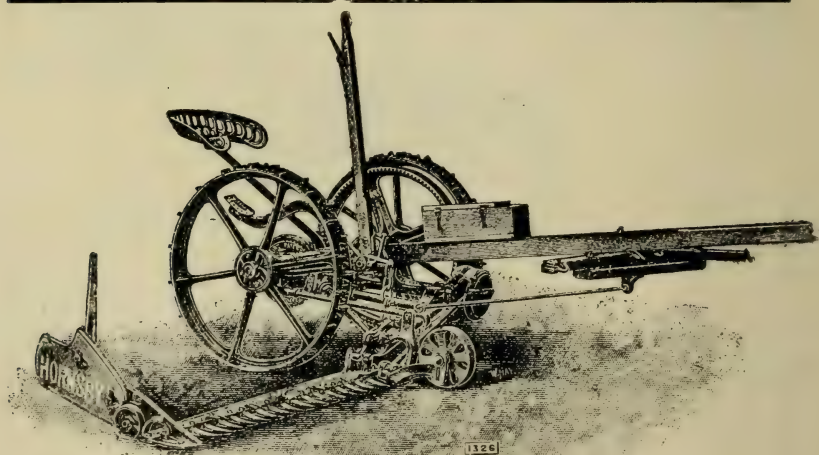
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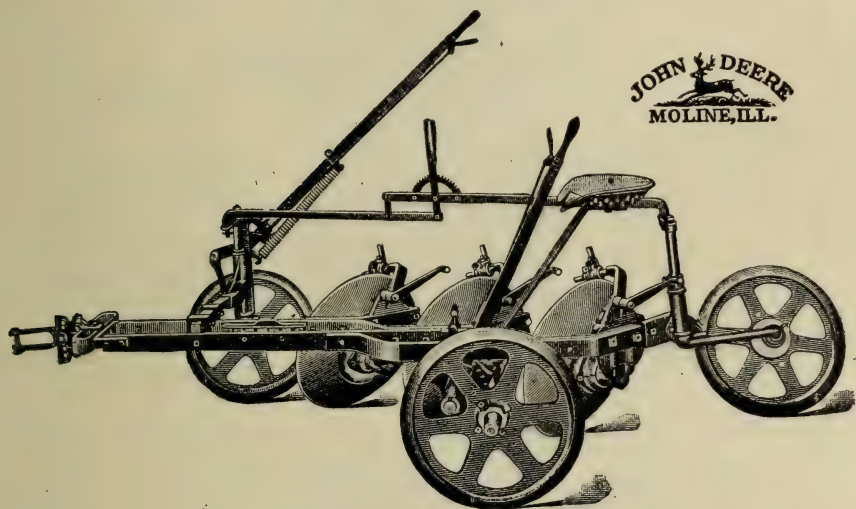
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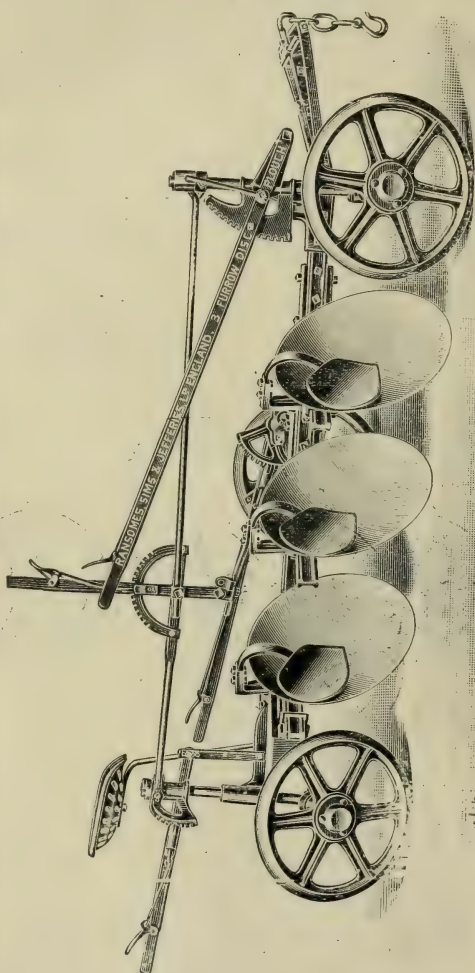
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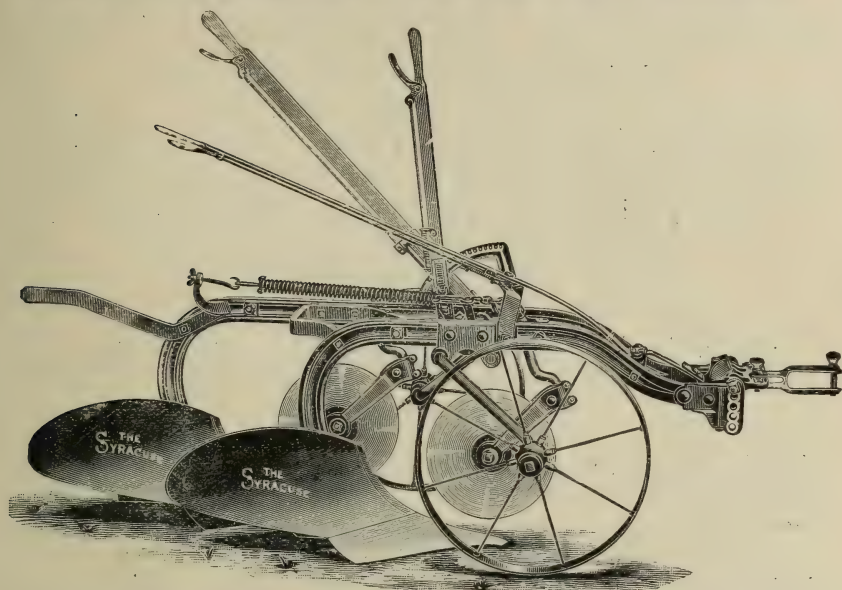
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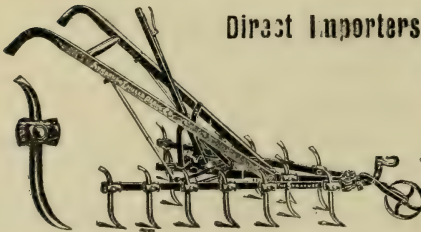
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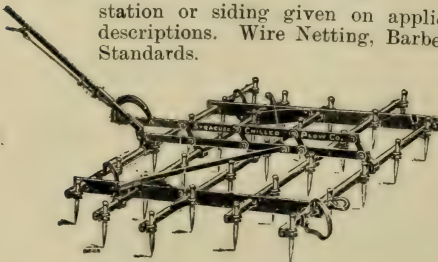
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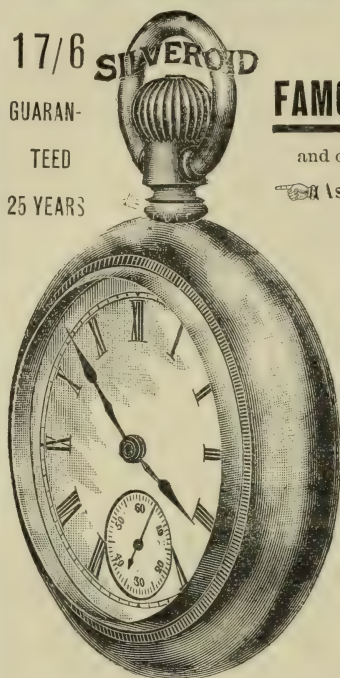
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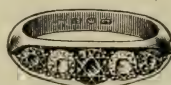
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VOL. VI.—No. 1.]

OCTOBER, 1908.

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Editorial.

The farming possibilities of Rhodesia are attracting more attention now than at any previous time in the history of the country.

Certain farming industries have been proved to such an extent that there is no longer any doubt as to the wisdom of employing labour and capital in their pursuit.

In former periods much capital was expended in the development of land which was more or less of a speculative nature. Certain things were tried according to the ideas of the investor, and perhaps had to be tried and tried again with new ideas and other investors before the present stage has been reached, when some distinction can be made between those which fail and those which succeed.

It must be admitted that among the farming industries that have been established, there is nothing new to Rhodesia. Grain, cattle and sheep, and tobacco are the industries that are indigenous to the country. The successful occupation of the white race rests not so much on the introduction of new and different industries as upon producing more and better grain, more and better cattle and sheep, more and better tobacco. It is true the white farmers are not confined to these industries, only up to the present nothing has been established as a speciality that would invite a class of men to depend upon it for a living.

All the other branches may be regarded as valuable adjuncts, and they are probably in Rhodesia more numerous than in most other agricultural countries.

But grain, stock and tobacco are the mainstay, and it is now when the new season is opening that farmers have it in their power to put in force the changes in procedure that are called for, in order to invite success where there had been failure in the past.

It must be observed that improvements proceed along certain lines. No drastic changes are required, but generally it is the following up of the methods and practice that have already been seen to succeed.

In stock raising it is at this season ascertained what the difficulties really amount to that have to be met and overcome in bringing herds through the dry season in good condition, and farmers have it in their power with the new season in front of them in taking and carrying out those measures that are best calculated to meet and bridge over the natural deficiencies.

The tobacco industry makes great forward movement from year to year; the experience gained one year through experimental trial is made use of next year for working on a larger scale.

There are perhaps certain lines in the tobacco industry that have not yet been taken advantage of to the extent that might be possible.

While the high-class tobaccos are unrivalled, and no effort spared in keeping up the high level of excellence they have reached, yet the curious fact exists that the great bulk of pipe tobacco smoked in Rhodesia is imported from other S.A. Colonies, chiefly the Transvaal.

We do not infer that the tobacco imported from the other Colonies is any better than the same class grown in Rhodesia, only these Colonies grow and manufacture a tobacco with the view of supplying the existing South African demand for a cheap smoking tobacco.

But in the tobacco industry of Rhodesia this branch of the business is almost neglected, with the consequence that farmers lose the local market naturally accruing to them.

It must be noted that the class of pipe tobacco which is chiefly smoked in Rhodesia, and which creates the greatest volume of trade in the article, is a mixture re-tailed at 3s. to 4s. per lb.

We think that, without in any way interfering with the high class tobaccos grown and manufactured in Rhodesia for export trade, there might also be a pipe mixture produced that would compete with the article now imported from the Transvaal and other Colonies.

The scale insect infesting the trees on Salisbury Kopje has lately had attention drawn to it on account of its threatening to spread.

Since this particular scale was unknown to entomologists, there was no information what measures were best to adopt in dealing with it.

In order that accurate observation should be made on its manifestation, the services of Mr. Chas. P. Lounsbury, Cape Government Entomologist, were obtained through the Cape Government, and investigations were made by him concerning it on the spot.

Mr. Lounsbury has submitted his report to the Secretary for Agriculture, and which is published in the present issue of the "Journal."

It has been ascertained that the presence of this scale (to which Mr. Lounsbury has given the name "Mammoth" scale) is not confined to the restricted area of the small kopje where all the Msasa trees are loaded with them, but that it has already extended to a distance of two or three miles, but only in very small numbers.

One of the points of most importance in dealing with it is the determination of the source from whence it came.

In order to help this inquiry, an illustration of the scale (natural size) is given in this issue, and Native Commissioners in the outlying districts and parties living throughout the country are invited to send specimens to this Department should they at any time happen to observe them anywhere on any of the trees on the veld.

Mr. Lounsbury attaches great weight in having it determined whether or not this mammoth scale is indigenous to the country, or whether it has been imported from some other country, and finding it anywhere in Rhodesia other than the Salisbury Kopje would give the necessary clue.

Prof. Wallace, Professor of Agriculture in the University of Edinburgh, has lately made a tour throughout Rhodesia, with the view of making observations on the agriculture of the country.

We are not aware that Rhodesia has ever been honoured before with the presence of an agriculturist of such eminence having for his express purpose making an investigation of the agricultural resources and capabilities of the country.

In visiting the various parts of the country, the Professor made it his chief endeavour to acquire information from those engaged in the business of farming—gaining what he wanted to know at first hand.

We have little doubt the report which will be given by Professor Wallace will be an interesting document, and will be received with due respect and attention by Rhodesia and its farmers.

Some Notes on Cattle Breeding in Rhodesia.

By A. R. MORKEL.

A few years ago (1901) before the scourge of African Coast Fever swept over this country, I collected a few notes on cattle breeding which seem as applicable to the question to-day as they were then.

I will commence with the following paragraph from an article by "Bruni" in the "Australasian":—

"What the Americans describe as 'graded' cattle must not be confounded with cross-bred. The term 'grading' means bringing up an inferior mongrel herd to a high degree of usefulness by the continued use of pure-bred bulls of that breed which the herd-owners consider to be the best adapted to the conditions of life in the locality. A very large proportion of Australian herds belong to this category, and they present all degrees of improvement, from the original mongrel stock to the herds that have such an infinitesimal amount of base blood that it is scarcely worth noticing.

“In appearance these high grades would be taken, even by experts, for pure animals, but though very small, the taint is there, and they cannot be depended upon as stud stock.

“For the general herd these high grade cattle are extremely valuable. The small infusion of mongrel blood in their pedigree seems often to give them a hardihood that the pure breed does not possess.

“Of the two systems of breeding, the best for the average Australian cattle-breeder is, I think, grading up. From what I have seen of the two systems of breeding as practised in Australia, it requires the exhibition of much greater skill on the part of the husbandman to maintain a cross-bred flock or herd at a high degree of excellence than to grade up to something near that standard by the use of pure sires of one breed.

“As in cross-breeding, the success of grading-up depends mainly upon the selection of the best breed calculated to give the most profit in the locality. In estimating this profit a great mistake is often made. The money realised by individuals is only one leading factor. The real test is the return per acre per annum carried on over a number of years including periods of drought as well as periods of abundance.”

With reference to the above, I should like to state that since 1901 most cattle-breeders in Rhodesia have proved that the continued use of pure-bred bulls of almost any imported breeds is a mistake. Any attempt to breed animals above the quality of the veld is sure to end in disaster. This is a fact well known throughout South Africa.

The progeny of animals too well bred for the conditions of this climate are mostly weedy, and they become smaller and more weedy every generation while in the process of adapting themselves to the climate and veld.

If the animals were well fed and stalled in the winter even the best breeds would no doubt produce very fine specimens, but these remarks are not meant to apply to cattle raised in this way, but to the ordinary farmers' stock which constitute the bulk of the cattle raised in this country.

As to the amount of good blood which may be safely introduced, this is a question which each herd-owner should decide for himself, as it depends on a close observation of his veld and how his cattle thrive on it.

The Mashona, Angoni, Matabele, and other northern cattle have some useful qualities, chief of which are their extreme hardihood and ability to rustle for a living, and also great length of life.

Against these may be set their slowness in maturing, their rather light build, and preponderance of beef upon parts producing the lower priced cuts.

For generations the above cattle have lived in this climate, and we have in them a first class foundation to grade up from. They are far from ideal cattle, but serve the one useful purpose of infusing their hardihood into any progeny they may have from the better imported breeds.

Then comes the important question of what breed it is best to select sires for improving the general mongrel herd of this country.

Personally I am in favour of two breeds, viz., the Shorthorn and Devon. Of the Shorthorn I am, however, inclined to the opinion that we would not be able to grade up so high as with a Devon. There is a "fineness" about a Shorthorn's progeny which may be well enough for the first cross, but disaster would probably follow were the continual use of pure-bred bulls maintained.

To keep a fair standard of milking and beef-producing qualities on very good veld may be possible with the Shorthorn, but it seems a very easy matter to thus grade up a herd above the average quality of Rhodesian veld, when failure in one particular season may result in disaster to the herd.

On the other hand, "the Devon is a beast which does well in hilly, poor country, and is therefore hardy; he is also notably good as a trek ox, and he makes first-rate beef. The milk of Devons has a high reputation for richness. The quality of Devon butter stands high—many hold it cannot be beaten. Devon cows are excellent calf producers. Given fair treatment, a cow will calve every year, and that is a good deal more than can be said of South African cows in general."

The above is the opinion of a noted Natal Devon-breeder, and since 1901 I have been able to form my own conclusions that it is a perfectly correct one.

It seems that by using a more hardy breed of animal to grade up our mongrel herd, we would be able to infuse a much larger quantity of good blood into it than would be

possible were we to use good blood from a more delicate breed. Therefore my preference is for the Devon.

There are many other breeds of cattle that may do quite as well as either the Shorthorn or Devon, notably Hereford and Aberdeen Angus. The results that have accrued from the use of sires from these different breeds upon our common cattle have not been widely published.

We are still very much in the experimental stage, and it remains to be proved which breed will stamp the greatest amount of excellence on the progeny of the mongrel herd, and therefore we do not know for certain from which breed we should select sires for the grading up system.

The Cattle Industry in Rhodesia.

(Continued.)

By J. CAMERON.

In taking a general view of the way in which the land in Rhodesia is being taken up and occupied, it may be perceived that for cattle raising purposes there are two main divisions—Ranching and Mixed Husbandry.

RANCHING.

The term "Ranching" is used to denote the system whereby the natural grazing resources of the country only are made use of in maintaining a herd of cattle. Ranching means large areas and large herds. Thirty thousand acres may be taken as the smallest area compatible with ranching, while the number of stock is only limited to what can be carried when grazing is at its worst.

An estimate of what number of stock a ranch of 30,000 acres will maintain can only be an estimate, but from the experience already acquired, taking one season with another, from 700 to 1,000 head is about the number, or thirty to forty acres per head.

During the best of the grass season, from December till April, three or four acres will provide abundance per head, so that there is no comparison between what the veld can do at its best and at its worst.

Apart from the breed or class of stock best fitted to meet the conditions, the economic question arises as to how "ranching" should be carried on in order to get the best returns from the veld. In starting, the ranchman must have in view the selling of his annual drafts—what class he intends to raise for marketing.

There must be some design infused into the industry which will make its impress on a herd, make it fittingly adapted to produce a certain character of animals.

Thus if trek oxen be the object, selection should be pursued in the direction of size and hardihood, and no other qualities need receive much consideration. Native cows, mated to a bull that can transmit the desired character to his progeny whatever be his lineage, such cows and their selected progeny are admirably suited for making the most of the veld towards the production of trek oxen.

The Africander breed taken by itself is unmatched for trek purposes, and also for hardihood in withstanding the rigours of the veld; they have reached such perfection in these respects that no improvement need be looked for by crossing with any other breed.

As far as the veld is concerned, the same may be said in regard to native cattle, increased size only being an advantage to farmers. Crossing native cows with Africander bulls has been resorted to in many instances with the view of securing this increased size in the progeny.

It is, however, far from being established that the method has been a success. Several of the largest breeders in Matabeleland, after ten years' experience, pronounce that mating native cows with Africander bulls is a failure—that the subsequent breeding qualities of such crossed progeny is lamentably deficient.

Every other pure breed, Friesland, Shorthorn, Devon, Hereford, Aberdeen Angus, gives a good cross at once with native cows, the progeny carrying forward the good qualities, instead of coming under "reversion," as with the Africander.

But ranching is not confined to the production of trek oxen. It is essentially established for breeding purposes—for producing animals that will sell. For beef purposes, however, an altogether different type of animal must be forthcoming than for trek, and another system adopted in order to furnish it.

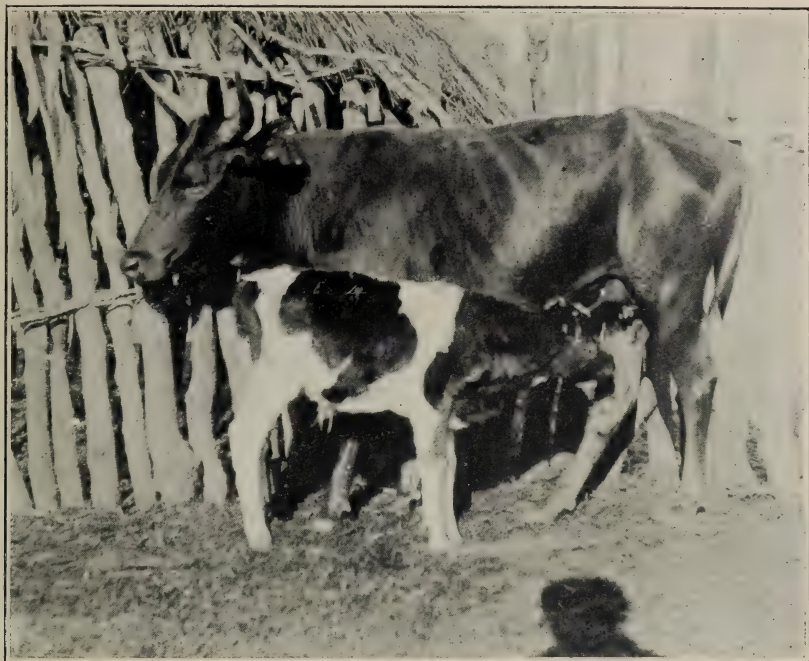


Photo by]

Native (Angoni) Cow and Crossed Calf.

[R. J. Laidlaw.



Photo by]

Native (Angoni) Cow and Crossed Calf,

[R. J. Laidlaw.

For beef, quality and quickness of growth are essential, towards gaining which the attention of the ranchman will be directed in making his selections.

It has not yet been manifested how far "grading up" can be followed up in pursuing beef-producing qualities starting from a herd of native cows. This much is evident, that the first cross between a native cow and any pure British breed goes a long way towards fulfilling ideas of a beef animal. Thus the first step may be taken not only with safety, but it carries with it great significance in the policy which it enables a ranchman to pursue. Cows may be selected having the desired character of hardiness—either native or the crossed progeny. By using only pure-bred bulls the class of young stock obtained will command a price for being used for beef purposes whether they are matured on the ranch or not. The ranchman's object will be to keep as many as possible of that class which he is assured will carry themselves through, and that is cows. The young stock being better bred and more delicate will have to be disposed of as early as possible.

The whole stock will be breeding cows, and their progeny up to 18 months or so old, instead of a large proportion being kept on for maturing, while being at the same time a class for which the ranching system is unfitted.

Even with the foregoing system, and with the class of animals, it will be found that care and forethought will have to be exercised in getting the cows to calve down at the proper time, and also that the calves on being weaned should be segregated by themselves and fed with hay over the worst period of the dry season. If well brought through and grazed the next season until about May, they will command a ready sale to those who are going in for keeping cattle by methods other than ranching, but who at the same time must have animals of this particular class in order to suit their purpose.

MIXED HUSBANDRY.

Looking at the matter broadly, it is "Mixed Husbandry" and not "Ranching" that the land in Rhodesia is being laid out for. A six thousand or a three thousand acre farm in Rhodesia is not a "Ranch," neither can it be insisted that a system of cattle keeping which may be

pursued profitably on a ranch must at the same time be the only one to adopt and follow on the restricted area of a farm.

There are not more than half a score of ranches in Rhodesia, while there are nearly a thousand farms where mixed husbandry is carried on. The importance of the cattle industry of the future rests on the farms. The methods which are devised for maintaining a larger and better stock on a farm are improvements which imply a great advance on the ranching system.

The two systems are far from being antagonistic. Rather they are mutually supporting, and will become more and more so as the cattle industry advances.

They will each tend specialising a certain branch. Taken generally, the ranchman will be a breeder, while the farmer will be a feeder of cattle.

But the farmer must also have a design. He must specialise in order to make the most profitable use of the feed that his farm grows.

Herein "breed" is of the highest importance. The gross number of cattle that can be kept on a farm is not the chief end to be attained, but it is the number and value that can be disposed of annually that is the test of success.

If it is dairying that the farm is devoted to, it is not the number of cows that are kept, but the quantity of dairy produce sold against outlay, that determines profit.

BREEDING FOR BEEF.

Breeding for beef is different from breeding for dairying, and whichever is adopted the other had better be left subordinated.

There are breeds of cattle and strains in every breed that are good milkers as well as good beef producers, but this does not imply that the cows can be utilised for the dual purpose at one and the same time.

If substantial annual returns are to be looked for, either one or the other must be specialised. Attempting too much spoils both.

It may be assumed that nearly every farmer starts with the same class of stock—the native or the mongrel class of cows bred from them—which are indeed the only ones

generally obtainable. But this class of cows, both native and nondescript, are very susceptible of being impressed by a pure bred bull, so that the progeny follow the type of the sire. The original breed is entirely broken up. A new character is given even to the first cross.

In choosing which of the different breeds—Shorthorn, Aberdeen Angus, Devon, Hereford, Friesland, is best suited for the peculiar circumstances of Rhodesia, it is well to bear in mind that the particular breed is not the point of highest importance.

The essential thing to consider is what the natural capabilities of the farm are as regards easy grazing ground and the quality of the grass. It must be taken into consideration what area or what quantity of hay is available for mowing. Unless ample provision is made for winter feeding neither of the foregoing breeds will prove satisfactory further than the first cross. The stock-breeder of Rhodesia is the mowing machine.

The breed of cattle that a farm will carry is not to be gauged in terms of what the same area would do as a ranch.

It is true that a type of animal is being sought for, by breeding, that will possess in a certain degree the "hardihood" and the "rustling" characteristics of natives and africans, while at the same time the quick growing and other desirable qualities of an improved breed will have been imposed.

In regard to this it may be observed that "hardihood" and "rustling" are qualities that can be done without to a remarkable extent. On a farm there is no necessity whatever that the hardihood or rustling capabilities of the stock should be put to the severe test that is almost inseparable from a ranch.

Indeed, "rustling" on a six thousand acre farm is out of the question. Square miles instead of acres are necessary at a certain period of the year if animals are expected to "rustle" for a living, and only natives and Africans are built to foot the journeyings.

There is nothing in the Rhodesian climate that demands "hardihood" apart from constitutional vigour, and when winter keep is provided no extra "rustling" is called for during any part of the year.

By using pure bred bulls, the grading up of the stock on a farm may be carried forward indefinitely, the only limitations governing the success of the herd being the quality of grass and the provision made for overcoming the difficulties incident to the dry season.

GRADING UP A BREED.

In grading up a particular breed, much consideration must be given to the nature of the grass on a farm. The rock formation from which a soil is derived has the greatest influence on the quality of the grass—whether it possesses bone-forming nourishment sufficiently to meet the requirements of a large boned and quick growing breed.

The best grazing lands exist on rock formations containing lime. If lime is deficient in the soil then phosphate of lime will be deficient in the natural grasses growing thereon.

Lime, although existing in vast quantities in Rhodesia, is very unevenly distributed. Hence on veld which is very poor in lime, the introduction of cattle which are so much larger than those which are indigenous do not always give the satisfactory results that are hoped for.

Cattle or other animals that are accustomed to roaming over a large tract of country often attain a large size in Rhodesia, since what they do not get in one place they get in another. Cattle, however, that are confined within the space of a farm have no such opportunity. They must exist on the farm, whether it suits them or not, and if it does not suit them they will degenerate.

The very fact of grazing, however, improves the natural grasses on the veld, and much can be done in assisting young stock by supplying any deficiency of phosphates by giving them crushed bones to eat, and indirectly by liming portions of the veld for grazing. Water from wells, instead of river water and stagnant pools, is also advantageous.

The relative merits of the different British breeds for usefulness under Rhodesian conditions does not depend so much on quick growth or size as upon the constitutional aptitude to undergo the slight modifications or alterations which are necessary in making them fitted for the surroundings.



Photo by]

Group of Dairy Cows belonging to C. C. Macarthur.

[H. C Thwaits



Photo by]

Mashona Cow and Calf, after Friesland Bull,

[R. J. Laidlaw.

Robustness of constitution and sprightly vigour, together with prepotency, are qualities that every introduced breed must have if it is to succeed in establishing itself in Rhodesia.

Although it is not yet settled, and probably never will be, which is the best breed for Rhodesia, yet this much can be said already, that not one of all the foregoing mentioned breeds has been a failure. Indeed it most probably will be asserted by the different owners the one he himself possesses is the best.

Of the two provinces, Matabeleland has the finer quality of grass, and hence will support a very superior breed of cattle. The grazing period is however shorter, and more winter feeding will be necessary.

Mashonaland possesses a coarser grass, but it is eatable longer in the season, while so many vleis afford grazing a month or two earlier than Matabeleland.

Bone-forming material is more deficient in Mashonaland than in Matabeleland, and hence more liming will be required.

In both provinces the poverty of the veld during the winter months does not arise from the grass all being eaten off, neither is it due to burning. What makes the veld unsuitable for stock after June is that the grass becomes indigestible—it is in reality no better than wood shavings, and the instincts of cattle, for their own preservation, prohibit them from touching it. The same grass if cut and made into hay at the proper time, is quite nourishing and readily eaten by cattle and all other stock.

Silage Stacking.

(Extract from "Mark Lane Express," 3rd September 1894.)

A heavy man was kept constantly treading round the outside of the stack as it was being built up, and this is all that was done. The inside of the stack is better untrodden, as heating takes place more rapidly when the

grass lays hollower. The man who trod round the outside carried a bucket with loose salt in it, which he sprinkled about on the small patch salted for about 18 inches in width from the outside.

You are probably aware that you can make either "sweet" or "sour" silage, just as you please? If you desire the former, you must not hurry your stack up too soon, but build up a portion, say 5 or 6 feet, and then let it get just as hot as you like. For "sweet" silage, the temperature must be over 122 degrees at least. Anywhere from 122 to 160 degrees (or even more) won't hurt with green, damp grass, which you cannot fire if you try to. When the first portion of the stack has thus heated (or, in other words, "cooked") build up another portion. The weight of this second portion will so compress the first portion stacked as to exclude the air, arrest fermentation, and stop over-heating, just on the same principle as your putting your foot on a burning substance on the ground presses out the fire and heat. You cannot possibly get combustion, or burning, to go on if the air is excluded or pressed out. If you build up a large mass of green grass rapidly, you so overweight the lower portion of the mass as to prevent air getting into it, and, as a certain consequence, you have unfermented "sour" silage, which has a smell often far worse than a stale tan pit, and is the abomination of everyone who has to handle it. This makes the hands and clothes of those employed in its use a nuisance everywhere, especially in the dwelling house of the farmer or the cottage of the labourer. If farmers would only study for themselves how to secure the best results, they would not throw up the system in disgust just because they had made a blunder through sheer ignorance in a first experiment, or had heard of someone else who had.

You say you have begun a stack 7 yards in diameter for grass calculated at 150 tons. I hope you have a good elevator to get the grass up with, as the stack will get very high. I should have preferred 9 yards diameter at least. Five tons of green grass makes one ton of dry hay, or from three to four tons of silage, and well-made silage should weigh from 40 lbs. to 56 lbs. per cubic foot.

Growing Wheat.

In a letter addressed to the Agricultural Department, Mr. Heron, Eagle's Nest, Headlands, writes:—

If the Department is issuing instructions as to any particular way in which it is desirable this seed should be dealt with I will do my best to follow them.

Suggestions on the following points would be useful:—

- (1) Site, high or low, dry or damp?
- (2) Time to sow?
- (3) Sow in drills or broadcast?
- (4) Use kraal manure or none?
- (5) Should seed be treated chemically or not?
- (6) Aspect, north or south?
- (7) Any other instructions advisable?

Will answers appear in Journal?

The reply sent to Mr. Heron is herewith given for general information to intending wheat-growers.

(1) *Site—high or low, dry or damp.*

The situation of a field for growing wheat is not wholly determined by height above the level of the surrounding country, neither by being in a valley or depression below that level. The guiding principle of selection is that the land possess a certain closeness of texture without being too retentive, have plenty of depth and evenness for root expansion and for downward and upward movement of water.

A light sandy or gravelly soil is unsuitable, since it is too susceptible for being affected with variable weather conditions, besides being nearly always too poor.

A stiff clay soil is unsuitable because it becomes baked and hard during a period of drought. Thus medium soil is best—that which is capable of absorbing a large amount of moisture without becoming wet and plastic, and which does not cake and become too hard on drying.

Although the situation has often a great deal to do with the formation of a soil possessing the requisite conditions, yet it often happens that suitable land is found on high ground, even on the top of kopjes, while valley bottoms are quite good provided the subsoil is sufficiently open and porous.

Land must be sufficiently dry that at no time during the growing period of the crop will it remain waterlogged.

Whether a soil is "wet" or "dry" is in most cases well ascertained after a period of heavy rainfall.

An open porous subsoil will always dry the land provided there is no ooze coming from below keeping the subsoil wet.

An ooze of this kind is not infrequent, and it nearly always happens that the land is too wet for getting the seed bed prepared until too late in the season, and only a winter crop can be grown.

A soil containing a good deal of sand is to be preferred for early sowing (October—December) on account of the more favourable way it can dispose of any excess of rain during the early part of the summer season.

For later sowing (January—February) heavier land may be used—that is land containing more silt and clay but which has shown to continue firm and dry enough for cultivation, after receiving a large amount of rain.

It may be accepted generally that where a good crop of mealies has been reaped for two successive seasons the same land will yield a good crop of wheat.

Red soil will be more readily found suitable than black vlei soil. When the land contains too much vegetable matter it will happen that the wheat will grow too much to straw, while the ears will be empty.

(2) *Time to Sow.*

No specific date can be mentioned as fixing a certain and only time when wheat can be sown with good results.

Generally speaking, when the land is "dry" and there is little danger of its remaining waterlogged, even under heavy rain, wheat can be sown early—any time from October till December.

When however the land under heavy rain may be liable to retain water, and become more or less "wet," then later sowing is advisable. It is moreover this class of soil that on the whole is most suitable for wheat, and probably after experience it will be found that from the middle of December to the middle of January will be the best season for sowing.

Matabeleland is the better suited for early sowing, having drier land and less rainfall, while Mashonaland having more wet land and heavier rains will induce later sowing.

(3) *Sow in drills or broadcast.*

In so far as the yield is concerned, there is little advantage gained either way. Less seed per acre is required by drilling. There is also an advantage in drilling that a certain amount of cultivation and weeding can be accomplished without destroying many plants.

Thus, if a growth of weeds is apprehended, drilling should be resorted to, but if the land is clean and in a good state of cultivation, broadcast sowing is quite as good. About 60 lbs. per acre is required for drilling, and about 80 lbs. broadcast, but the return per acre is in favour of broadcast sowing.

(4) *Use kraal manure or none.*

If the land is inclined to be poor, or if it has borne a good many crops of mealies without ever having received any manure, there is no doubt a better crop of wheat will be obtained by the use of kraal manure.

There is some objection to kraal manure on account of the weeds it introduces when used fresh. A way of dealing with it in order to overcome this, is to apply it to the land direct from the kraals—spreading it over the surface as evenly as possible.

It should be put thus on the land before the rains commence. With the first rains all the weeds will spring up directly, and when they are all well started growing, the land should be then ploughed when everything that has germinated will be buried under and killed. This system is specially applicable for crops that are to be sown in December or in January, since the manure can be applied at any time during the dry season and allowed to lie, and the weeds all come up until the time arrives for preparing the seed bed.

(5) *Should seed be treated chemically or not.*

There is no necessity to treat seed wheat chemically unless smut or other fungoid diseases are apprehended. But since chemical treatment can be easily applied, and it does not injure the vitality of the seed in any way, it is a means of preventing such diseases being introduced.

For the purpose, Formalin has given the most satisfactory results. Formalin at 40 per cent. strength (the

usual commercial article) is used at the rate of one pint to 30 gallons of water. Sprinkle the formalin solution over the seed with a watering-can, and shovel over until the surface of each grain is thoroughly moistened. Then shovel into a heap and cover with wet sacks, letting it remain so for two hours. Then uncover and spread the grain out to dry, turning it over so frequently that it becomes sufficiently dry to prevent germination. Put it into a clean sack, or one that has been treated in the solution, when it will keep until it is required for sowing. For small quantities, an ounce bottle of formalin to three gallons of water is the proportion.

(6) *Aspect—North or South.*

Other conditions being equal, an aspect towards the east is not to be favoured. The more constant winds coming from the east, the ground that is exposed in that direction suffers from more speedy evaporation than ground sloping towards the west.

Again, ground sloping towards the south—away from the sun, is not affected by the sun's heat quite to the same extent as ground sloping to the north—towards the sun. Thus a more even temperature will pervade the soil having a southern aspect, modifying excessive evaporation.

On the whole, ground sloping towards the west and south has a better aspect than ground which slopes north and east, but this is far from applying to every locality.

(7) *Any other instructions advisable.*

Wheat requires a firm seed bed. The field taken is supposed to have been ploughed and harrowed some time during the winter months. If not ploughed before, it should be ploughed as soon as possible after the first rain. In preparing the seed bed the land should be ploughed to the depth of about six inches. If the seed is to be drilled in, the ground should be harrowed two or three times, making a smooth even surface.

After the seed is sown, the land should be rolled with a heavy roller, and afterwards a light harrow should be passed over, breaking the surface and forming a mulch, controlling evaporation.

Mechanical pressure or soil packing is better for conserving and utilising soil moisture than the consolidation that follows after the dripping and pelting of rain. When

mechanically pressed the soil resists further compression by atmospheric agencies, and thus remains in the form and condition given to it; and which is calculated as favouring root development and the conservation of moisture.

For sowing broadcast the treatment is the same, only the principal harrowing should be given after and not before the seed is sown. The land should be rolled and lightly harrowed afterwards, but no cultivation can be pursued while the crop is growing.

The cultivation of growing wheat is profitable only when there occurs a period of drought shortly after it comes up.

The weather conditions should be taken advantage of within the period from November till February, as far as the varieties of soil will admit. Cloudy weather and a damp soil are the most favourable conditions for speedy germination. The ground must not be too wet for being worked upon, nor is it judicious to sow when the ground is very dry, since if the seed only germinate, it is liable to die out before rain may come. Wheat requires about sixteen weeks to come to maturity.

The following letter, also relating to wheat growing, has been received by the Department from Messrs. Anderson and Robertson, Devon Farm, Pemba, N.W. Rhodesia.

"Might we venture to suggest that a note be given in the 'Agricultural Journal' of the length of time this wheat takes to mature, so that farmers at a distance may form an idea as to the best time to sow; or perhaps advice might be given as to what is the best planting time by those who have experimented already."

[Replying to this it may be stated that the experience with wheat in Rhodesia has been chiefly as a winter crop under irrigation when it is sown in April or May and reaped in October.]

In the case of the rust-proof wheat, the time of sowing which is now in question there is no Rhodesian experiences with it to go by.

In so far as experience with other wheat is concerned, when sown in October it has been reaped in March (when not rusted). Thus about sixteen or eighteen weeks will be about the time required for this rust-proof wheat as a summer crop.—EDITOR.]

Notes on Tobacco Culture.

By G. M. ODLUM, Agricultural Assistant.

Many apparently think that the failure of a certain sale of Turkish tobacco, held in another African colony, to realise good prices, indicates that the market is over supplied. This is not the fact; and the low prices realised at that sale were due to other causes, the principal one being the very limited quantities of tobacco of one type offered. Small quantities are useless to a manufacturer, inasmuch as they are insufficient to enable him to maintain a supply of the same quality of brands.

We have a very profitable oversea market arranged for Rhodesian Turkish Leaf that we can avail ourselves of at any time the African market fails to pay profitable prices, and growers need have no fear of over-production, if they keep their quality up to the standard demanded. It must be remembered that the whole production of tobacco in Rhodesia would only supply certain factories in other countries with leaf to keep them working for 24 hours, while the whole of the African crop is less than one-tenth of one-hundredth part of the world's annual consumption of tobacco.

Africa is now importing very large quantities of Bright Virginia Leaf, and all the factories are eagerly bidding for local-grown leaf of good quality; but it must not be forgotten that good leaf is the result of intelligently directed effort, and that all faults of commission and omission as far as the crop is concerned are discovered by the buyer, and the grower penalised. There are African buyers who are prepared at any time to purchase one million pounds of Bright Virginia Leaf of one type and good quality at 1s. 6d. a pound, as against 3d., the price paid for dark leaf, the supply of which already exceeds the demand.

Whether a planter should grow Virginia, or Turkish, or both, depends upon the type of his soil and weather conditions. The Turkish varieties are the hardier and the easier to grow, and will often return a profitable crop on soils not sufficiently fertile for Virginia, and in places where the rainfall is uncertain; while the Virginia varieties require less labour, but demand better conditions. A more complete knowledge of the tobacco plant is required for the culture of Virginia than for the production

of Turkish. Turkish varieties suffer from excessive rainfall and are of the best quality when matured during periods of dry weather, while Virginia varieties demand a fair amount of moisture and must never be permitted to be checked in their growth.

Virginia varieties are planted from November until the end of January, and Turkish varieties are largely planted during January and February, thus permitting each to mature during the weather best suited to its requirements. Virginia varieties should be manured with commercial fertilisers, while Turkish varieties are not so exacting, although applications of fertilisers are often advantageous. Flue curing is essential to the production of Bright Virginia, and while not absolutely necessary to the production of Turkish, the system has certain advantages over sun curing, particularly during periods of wet weather.

PREPARATION OF SEED BEDS.

Notwithstanding repeated failures, many have still to learn that the beds cannot be neglected without risking a crop failure. The site of the seed bed should be chosen near a water supply, but not in a place that may be flooded. After the soil has been thoroughly worked up, timber and brush should be piled on the site and the soil thoroughly baked by means of a slow fire. This is for the purpose of destroying insects and weed seeds. Better results are secured when the soil has first been moistened. The bed should again be worked up and the sides at once closed in by means of brick or iron. The bed is then fertilised with commercial manure, applied at the rate of a pound to every 10 square yards. From one to two ounces of Virginia and two to four ounces of Turkish seed are sown to each 100 square yards. To secure an even distribution, mix the seed with ashes or meal; brush in with a broom or wisp of grass, and water the bed at once with a sprinkling can. The beds must be kept moist, even if it involves watering more than twice a day, but the soil must not become sodden. The bed is then covered with tobacco bed calico.

To cover without burning is to make a better breeding place for insects; to cover without closing in the sides or to close in the sides without covering is useless, for the moths that cause the destruction of the plants can creep

through any opening that a house-fly can get through. If you are not prepared to make the best kind of bed, it is wiser to leave tobacco culture alone; the matter of covering the beds is not a fad or an untested theory.

Seed beds may be from three to six feet in breadth, according to the width of covering used, and of any reasonable length. A succession of beds should be made every week or ten days, from the beginning of September until the end of December, the Virginia varieties being sown more freely during the earlier half of the period and the Turkish varieties to a greater extent towards the end.

For Virginia we recommend Hester or Goldfinder (supplied by this Department at 1s. and 1s. 2d. per ounce respectively), and for Turkish Leaf Yaka or Xanthi (supplied at 24s. per lb.).

PLANT BED COVERING.

This cloth can be obtained from the Anglo-African Trading Company, Salisbury and Bulawayo, at about 2½d. per yard.

Bacon Curing on the Farm.

By MR. LOUDON M. DOUGLAS, Edinburgh.

(From "Douglas's Technical Leaflets.")

In the development of agriculture it is essential to keep in mind that the most profitable way to work the dairying department is by utilizing the bye-products. In the manufacture of butter the principal bye-product is separated milk, and in cheese making it is whey. Both of these commodities lend themselves to pig-feeding, and indeed, provide about the very best food for the production of bacon. So far back as 1847 this fact was recognised by Youatt, who is perhaps the most trustworthy of authors on the pig. In his treatise entitled "The Pig," he states in the chapter on feeding, that "for sty-fed pigs the washings of the dairy, as butter and skim milk, whey, etc., are excellent, and especially whey thickened with barley or oat, or pea-meal, whey being more nourishing than skim milk; the animals thrive and make flesh

so well on it that many farmers are of opinion that this mode of employing their sour milk is more profitable than making cheese. But when the swine have once become habituated to this kind of diet it must be continued, as they would fall off if put upon any other." Of course, many things have happened since 1847, and new authorities on the pig have sprung into existence since then. None, however, have materially altered the views of Youatt. Modern authors, such as Harris, Coburn, Spencer, Craig, Bondeson, Day, and others, practically confirm this opinion. It has been left to Professor Day to summarise the teachings of all the others, and to put in concise form in his book entitled "Swine," all that is worth knowing on the subject.

It seems quite certain then, that separated milk combined with barley is the ideal food for pigs, but a modification of this feed will no doubt suggest itself to many who are not in a position to use that cereal. Maize may be used along with separated milk or green food, and the excess of oil which is present, and which goes to make oily fat in the pig is to some extent neutralised. But exclusive maize feeding will not do. Some harder food such as cereals must form part of the feed, more especially when finishing off. A good plan is to graze the young pigs for five months, then sty-feed them on hard feed for two. In that way firm good bacon will be produced.

Amongst the foods which may be used are: Cooked potatoes, oatmeal and crushed oats, pollard bran, ground wheat, rye meal and separated milk, but it must always be borne in mind that what is wanted is firm meat, and this can only be produced by feeding such a ration as will not give too much oily substance.

The great point in breeding pigs is the shape or conformation. A long square deep side is wanted, and it is just as cheap to feed pigs producing such sides as it is to feed short round ones that no one wants. Different breeds suit different districts and countries. The principal breeds cultivated in Europe are large Yorkshire and middle Yorkshires amongst the white pigs; the Tamworth, which is a red breed, and amongst the black breeds, the Berkshire, Suffolk and Sussex. The Berkshire is a fine pig for crossing, and splendid results have been obtained by crossing large whites with Tamworths and then with Berkshires, but local circumstances must always determine what rule is best to follow.

It is well to know the general principles which govern the matter, and modify these to local needs.

When the pigs suitable to the district have been produced, it then remains to find out what will be the best use for them. They can be handled in two ways, viz.: (1) They can be made into bacon on the farm; or (2) they can be handled in a co-operative or other bacon factory.

(1) BACON CURING ON THE FARM.

The equipment necessary for bacon curing on the farm is small. The principal thing is to choose as cool a place for the curing process as possible, such as an outhouse, or, better still, a cellar excavated out under any of the farm buildings; a small place will do. The floor should be laid with flagstones or cement, the atmosphere should be sweet, and the place should be dark, but should be well ventilated.

The bacon pig will weigh about 217 to 224 lbs. live weight, and this pig will turn the scale at about 168 lbs. dead weight; that is with the offal excepting the head, feet, and flake lard, removed. It will be necessary, therefore, to provide a scalding vat for a pig of this size. A large half barrel or similar vessel will do. In addition to this a simple rope pulley block, a few wooden gambrels or spreaders, two or three 10 in. straight knives, a steel, 20 in. back saw, and a 10 in. Smithfield cleaver, will complete the tools required.

The pig may be first stunned by striking it sharply between the eyes with a mallet, and it is then slung by means of the pulley block, which can be fastened to the branch of a tree or a cross beam, by one of the hind feet head downwards, and a sharp 10 in. straight knife is inserted in the throat in the direction of the heart, so as to sever the main blood vessels. The blood at once rushes out, and may be caught for use in making blood puddings, or allowed to go to waste. In a few minutes the carcase will be quite free from blood, and may then be lowered into the large tub already spoken of. This tub should be previously filled about half full with water at about 160 degs. Fahr., or just so hot that the hand cannot be held in it comfortably. The carcase is turned round about in this water until the hair comes away easily in the hand. The two hind legs are then slit, so as to expose the

sinews, and these are loosened with the finger. A gambrel or spreader is then pushed in beneath them, and the carcase is hoisted again into the vertical position head downwards. It is scraped all over quite clean, by means of a blunt knife, or, better still, a pig scraper, cold water being thrown over it occasionally meanwhile, so as to cool it down as much as possible. A slight incision with a knife is then made between the aitch bones, and this is continued right down to the apex of the lower jaw. Next, the knife is inserted so as to sever the aitch bones, and the bladder and organs of gestation are removed. The crown end is then cut round and removed, along with the fat gut which has been loosened right along the back. Then the remaining guts, stomach and fat are pulled out. The liver and kidneys are taken out, and are at once thrown into cold water so as to cleanse them. The breast bone is severed by means of a saw, and the skirt is cut right round, as close to the flake lard as possible, and the heart and skirt are cut from the lungs and thrown into cold water to be cleansed. The lungs and windpipe are removed through the severed breast bone and cut off at the base of the tongue, which is left in the head, or may be cut out there and then so as to be used. All these various parts have their uses on the large scale, and they can also be utilised to much advantage on the farm. The guts or intestines should be cleansed thoroughly, then salted, and they can be used for sausage making. The liver, tongue, kidney, heart, etc., can be used fresh. The stomachs, if well washed and cleansed, make a very palatable dish.

The flake lard remains still in the carcase, and must be removed so that when that is done the whole inside can be washed with cold fresh water. The flake lard after cooling should be cut up and rendered.

It is necessary now to split the carcase in two, and this is done by making a straight continuous cut just under the skin right down the back from the root of the tail to the neck. The next cut is made deeper on the right side of the back bone, making that side clear and without leaving much meat on the bone. The left side of the back bone is cleared in the same way, so that the two sides are now separate.

In factories, where the "dead-weight" is taken, the head, feet, flake lard, and back bone are all weighed in,

but the remainder of the offal is not. If the pigs are weighed warm a deduction of 3 per cent. is made for "beamage."

On the farm, however, these matters are of no interest, as it is assumed that the farmer proposes to utilize most, or all, of the carcase in his own household.

When the head, feet, back bone and flake lard, have been removed, the sides are allowed to hang until quite cool. A cool shady spot is best for this purpose, and if possible, the carcase should be hung where there is a gentle current of air.

The next process is the curing of the meat. This cannot be carried out successfully unless the sides are cool and stiff. When this stage is reached they are taken down, laid on a table or a bench, and trimmed. The inside is scraped free from fat, and the neck is trimmed free from bloody pieces, the steaks are taken out and are utilized forthwith in the fresh state. The neck bones and aitch bones are cut loose, and the spare rib and breast bones are taken away along with these. The tops of the ribs are also sawn off, and the blade bone taken out. The large blood vein in the neck is removed, and the sides will then be trimmed complete.

It is now necessary to have ready some additional apparatus. A small pickle pump is necessary, together with a supply of pickle and a salinometer to test same. The pickle may be prepared the day before, so that it will be nice and cool. It is made from the following recipe:—

14 lbs. salt.
 1 $\frac{1}{4}$ lbs. saltpetre.
 1 $\frac{1}{4}$ lbs. dry antiseptic.
 1 $\frac{1}{2}$ lbs. cane sugar.

Make this up to five gallons with water, boil and skim till clear. The liquor should test 100 degs. or thereby on the salinometer, and if it does not, it should be made up to this strength with salt.

By the aid of the pump this pickle is now injected into all the fleshy parts of the meat, and the sides are then laid on a bed of salt on the floor of the curing place. The bed of salt should be about an inch thick, and a wooden stave should be used to press up the belly part of the side, which should be uppermost.

Now, sprinkle all over the side an equal mixture of dry antiseptic and saltpetre, just sufficient to whiten it, and on the top of this put a heavy layer of salt. In fourteen days thereafter the bacon will be "mild-cured," for it does not require to be touched again unless it has to be cured with the intention of keeping some months. Then, at the end of fourteen days it will be necessary to add another dressing as before, and keep for other fourteen days. The resulting bacon will be salty, but it will keep a good many months quite fresh.

When the bacon is cured, take it up from the curing bed and wash it in some cold fresh water, then hang it up so as to drain for a few days. If it is wanted as pale-dried bacon, it can be hung in the kitchen after dusting a little dry antiseptic all over it, especially into the pocket hole. It will be ready for consumption at any time, but will get a more pronounced flavour the longer it is kept. Should it be desired to smoke it, an old barrel may be requisitioned. It will require to be so deep that the side can hang freely in it. An old tin can, which has had a lot of holes punched in it is then filled with hardwood sawdust, and after lighting it, the top of the can is covered with an iron plate so that as the smoke and heat come out they do not ascend right on to the bacon, but curl round it. Three days may be taken to do the smoking, but that is a matter of taste. Of course, a better smoke house can be made by building a small place about four feet square and six feet high, with a few bars running over at the top to which the bacon can be hung, and a small ventilator on the roof; but that may be considered too expensive for the small quantity handled. Smoked bacon will keep longer than pale-dried because of the preservative qualities of the smoke.

In the curing of hams there is very little variation from the method of curing bacon. The ham is cut from the side and nicely trimmed. It is then thrown into a tub of the pickle already mentioned, and allowed to soak for two days. The blood vein is then squeezed free from blood and the ham is laid shank downwards on the floor in a bank of salt. It is covered with the curing mixture similar to the bacon, and is kept 21 days in salt for mild cure, and about fourteen days more if required for keeping a long time.

The *Wet Cure* for bacon and hams is very often practised. The meat, both bacon and hams, is simply thrown into a pickle as given, and kept there until cured, the time being the same for either mild-cured or salt-cured meats as before.

Besides bacon and hams there are many other products which may be conveniently made on the farm, such as sausages and blood puddings. Then there is endless variety in dealing with the pigs feet, houghs, heads, tongues, etc. These should all be cured in pickle and cooked according to taste. It will be found, indeed, that with a little trouble much profit and satisfaction is possible by dealing with your own pig on the farm.

Co-operative bacon curing, or bacon curing in a factory as a private enterprise, is more extensive in character than bacon curing on the farm, and involves the investment of considerable capital, which, however, usually brings a high return both directly and indirectly.

Farms in the Enterprise District.

The district lying N.E. of Salisbury on the Enterprise road was the first taken up for agricultural purposes by the early pioneers.

The country is broken and hilly, but the valleys between are highly fertile, each farm consisting of a series of these hills and vales, affording good grazing for stock, and plenty of land highly suited for cultivation, together with facilities for irrigation.

Some of these farms have been occupied for over ten years. Much of the land has been under continuous cropping during all that time without manuring, yet there is little evidence of the natural fertility having much deteriorated.

The formation is mostly schist, with here and there diorite, and in some places limestone. Towards the north the formation is granite.

On leaving Salisbury by the Enterprise road, at about eight miles out the farm Glenlorne is reached, occupied by Mr. Edmonds. On this farm skilled methods of carrying on agricultural work are to be witnessed, the thorough cultivation of the fields being a pleasure to look at.

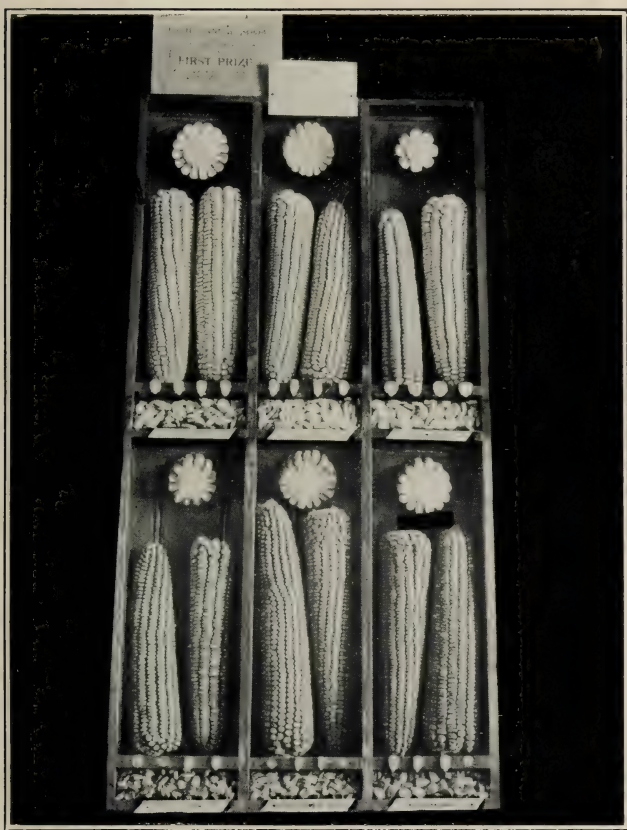


Photo by]

Maize Cobs, exhibited by J. Watson.

[H. C. Thwaites,

The stock of cattle on the farm are in the very best condition, giving evidence of the care bestowed by Mr. Edmonds in making ample provision for winter feeding.

We were informed by Mr. Edmonds that a few acres of barley under irrigation have afforded him a remarkable supply of green forage for his milk cows right through the season, and will last until the grass comes.

Three breeding sows with their litters were revelling in pumpkins, of which there is a large supply, and very useful at this season for going along with mealies in pig feeding.

Two of the sows are highly bred Berkshires, this breed appearing to do very well. Commodious and substantial pig styes are in the course of erection and nearly completed. They are built of stone, the whole being executed with Kafir labour, and giving no small token of their handiness in building, under good supervision.

In a large and well kept orchard, the lemon and orange trees were loaded with excellent fruit.

The neighbouring farm, Gletwyn, belonging to Mr. Ross, was also one of the first to be occupied. A few Eucalyptus trees stand seventy or eighty feet high.

Good mealie crops are grown on this farm, much of the cultivated land being well adapted for that crop. A good deal of land is under irrigation, and large crops of oat forage are obtained when the cultivation and seeding can be accomplished at the proper time, but which is hindered in some seasons through the land being too wet—a circumstance that affects a good deal of the land in this quarter.

The farm Stuhm, occupied by Mr. P. Raimer, is situated on the Umfindzi River, about twelve miles or so from Salisbury. It has been under occupation for about fourteen years. This farm is a long gentle slope of land extending from a ridge of hills right down to the river. The whole belt is highly fertile, and lends itself readily to cultivation. A water furrow taken out higher up the river irrigates a good breadth, and which may be extended at will.

A crop of wheat growing here under irrigation is the finest we have seen. It is now in full ear, having the appearance of yielding over 30 bushels per acre. Barley and oats are also an excellent crop. All the stock are in good condition. During the grass season the cattle,

of which there are a large number, are enclosed in fenced paddocks.

The next farm going eastwards, and still on the Umfindzi River is under the occupancy of Mr. Homan.

Very substantial farm buildings have been erected, and a considerable amount of cultivation has been done. There is a large area adapted for agriculture besides being good for stock keeping.

Further on in that direction, at a distance of 18 miles from Salisbury, the farm Kilmuir is reached, occupied by Mr. Watson. The river Umfindzi bounds one side of the farm, and along its banks there is a good breadth of alluvial soil that would encourage being put under irrigation. There are two picturesque waterfalls on this section of the river, one of them a sheer drop of ten feet, over a ledge. The edges of the banks are shrouded with large willow and other trees, while there is a close undergrowth of ferns and sub-tropical plants.

The stream is perennial; at this time (September) there is sufficient water to supply power for a good sized mill.

The homestead is situated on that part of the farm lying back away from the river. It is placed at the foot of a range of kopjes, and faces towards the south, overlooking an expanse of land on the farm which is all good for cultivation.

Although only a twelve month in possession, Mr. Watson has got a substantial and well appointed farmhouse built, besides other outbuildings erected, or in course of erection.

Over sixty acres were under mealies last season, Mr. Watson carrying on at his new farm the growing of selected varieties without interruption.

At last Salisbury Show, although from a new and unworked farm, he still managed to carry off the greater number of prizes for maize, thus giving tribute to his skill as a grower and cultivator, besides being an indication of the excellency of the soil on the farm.

Mr. Watson's system of maize breeding rests on the principles of rigid and painstaking selection of the seed. Having his mind fixed on a certain variety, and on its type, he makes personally the most careful picking out of the cobs conforming to his ideas.



Photo by]

Baling Hay.

[H. C. Thwaites.



Photo by]

Field of Barley, sown April, without irrigation.

[H. C. Thwaites.

But he not only makes a selection of the cobs, but he afterwards tests the individual merits of each cob as to its germinating qualities. Taking nine grains from different parts of each cob, he germinates these lots separately in a box, and rejects for seed all those cobs whose samples show weak germinating powers.

By this means Mr. Watson maintains the purity of the variety of maize, and at the same time keeps up the growing vigour—securing a type whose fertility can be relied on.

Mr. Watson is carrying on a work in maize selection which is valuable to agriculture generally, since in the course of a few more seasons, less will have to be rejected, and more of the crop will be up to the seed standard.

He believes that the varieties of maize, the seed of which came from America, and was of the highest class, so far from degenerating, are most certainly improving through being grown in Rhodesia, and thus if the standard of purity is kept up there will be little necessity to go to America periodically for fresh seed.

The soil on which Mr. Watson is growing his maize is a brown calcareous loam of good depth, containing a large amount of organic matter. Some of the kopjes on the Chishawasha side which bound the farm are composed of limestone rock belonging to the Archaic formation. On one of these kopjes limestone had been quarried and a kiln built for burning it, but it is not now being used. The rock is comparatively pure carbonate of lime, and its potential value for agricultural purposes in Mashonaland cannot be over estimated.

The influence of the weatherings of this strata of lime rock may be traced in the verdure over an area including a large portion of Kilmuir, and also on the adjoining farms.

The kopjes in the vicinity are admirably adapted for sheep. A flock of native and Cape ewes have given a remarkably fine crop of lambs this season from a Persian ram. They all look brisk and lively, and Mr. Watson informs us that they graze continually on a kopje without ever leaving it.

A few miles further east lies the Meadows, Mr. Christian's farm and ranch. The farm is well named, being a series of valleys bounded by diorite kopjes.

There is a red soil on the slopes and black soil along the valley bottoms. Two or three perennial streams run through the estate. In some parts the rock is more like schist, but there is no banded ironstone. There is fine grazing lands on the diorite, while on the softer schist the grass grows thickly, making good hay.

A good many sweet thorn trees are to be seen both here and throughout the whole district, a variety of tree which generally indicates the presence of lime in the soil, and where there is always good grazing.

Mr. Lounsbury's Report on the Scale Insect on Salisbury Kopje.

The Secretary for Agriculture,
Salisbury.

MAMMOTH SCALE ON SALISBURY KOPJE.

Sir,—

As requested by you I have made a field study of the large scale insect infesting the Msasa tree on the Kopje, with the view of giving an authoritative opinion on the liability of its further increasing and spreading, and of suggesting what measures I think might profitably be taken to combat it. As my remarks may be used for the information of persons not versed in the intricacies of scale insect life, I think I had best lead up to what I have to say on these practical questions by an explanation in regard to the nature of the insect. I think I am correct in saying that it is the largest one of the fifteen hundred or more known species of scale insects. I submitted it to the Scale Specialist of the United States Department of Agriculture, who has unique facilities for the identification of specimens. He also failed to connect it with any described insect, and proposed for it the name of *Lophococcus maximus*. Such a term does not commend itself to the layman, so for popular use I have adopted the name "Mammoth Scale."

It is characteristic of scale insects that they get their nourishment from the sap of plants by suction, for which



Photo by]

Mammoth Scale on Salisbury Kopje.

[H. C. Thwaites,

purpose they are provided with a very slender, long, tubular mouth organ, which is gradually worked deep into the tissue of the leaf, fruit or bark as the case may be. The insects, when young, are very active, but with the successive changes of skin which occur, the legs ordinarily fail to keep pace with the rest of the body. The sexes appear alike at first, but the males go into a sort of cocoon stage, and eventually develop into fragile flies, tiny in comparison with the other sex, and incapable of taking food. The females never become winged, and ordinarily become quite immobile when adult. This is the case with the Mammoth Scale. All the specimens now present on the Kopje are adult females, firmly attached to the bark by the mouth part; and to get one off the body has to be ruptured, or at least the mouth organ torn away. Male scale insects are usually few in numbers compared with the other sex, and no males of some common kinds have ever been discovered. Some species are able to propagate without males, at least for several generations at a time, and it is suspected that this may be the case with the Mammoth Scale. Only a single insect which I have had reason to consider the male of the species has so far been found. It now seems too late in the season for the males, however, and it is quite possible that some were present a month or two ago. The females are now beginning to lay their eggs. These are being deposited in a membraneous sac within the shell of the insect, a most extraordinary fact; and, apparently, the creature herself will slowly shrink away to a mere nothing, while meanwhile the shell will harden and become nearly filled with eggs. There seems to be nothing to indicate at what time of year the eggs hatch, and whether there are one or two generations of the insect in the course of a year. I incline to think that there is one generation only, and that the eggs hatch shortly after midsummer; but I will not be surprised if events show that there is one hatching in the spring and another in the early fall. Shells of the last generation, and some which may be of the generation before the last, are now to be found, and also innumerable moulted skins, about the size of a grain of maize, from which had emerged the young females of the present generation. The latter shells are numerous on thin branches of the tree, and apparently the female instinctively crawls back on to heavier

wood to settle down finally. One female must produce many thousands of eggs. None have finished egg-laying yet, so I am unable to form a close estimate. From the uniformity of the development at present, it is probable that the young all appear at about the same time; and I imagine that many of the trees on the Kopje must then swarm with millions of the minute creatures, and that every passing object must carry some away. As young scale insects can only crawl, they depend for their dispersion on indirect agencies such as the wind; but more to flying insects and birds upon which they may chance to crawl, and be thus unwittingly carried to other trees. In the vicinity of the most infested trees are to be found masses of a cotton like substance that burns like wax, in which bodies, which may be the shrivelled remains of young insects, are embedded. This suggests that the young, soon after hatching, secrete a dense mass of waxy threads by virtue of which they may be blown about. At present the idea is mere conjecture, and it is mentioned chiefly with the hope of inducing someone to observe the younger stages when the proper season arrives.

In common with many other scale insects, and indeed with numerous insects of other kinds, which suck the sap of trees, the Mammoth Scale exudes "honey-dew." The quantity exuded is not large considering the size of the insect, yet it is this "honey-dew" which chiefly attracts attention to the insect, and gives rise to the complaints against it. It is a clear, colourless, sweet liquid, discharged through a single orifice in the back most freely when the insect is disturbed. Sometimes a thin jet is ejected for several seconds, and this may follow no greater stimulus than blowing hard with the breath. Ants gather to get the liquid, and a certain small bird which frequents the Kopje is evidently very fond of it, poking the insect with its beak to get it. The ground beneath badly infested trees becomes heavily coated with it, and in consequence becomes shiny, black, and disagreeably sticky. A second fluid from the insect also attracts attention. This is of a light yellow colour, and resembles the yolk of egg. Apparently it is the vital fluid of the creature, and it exudes only and whenever the insect is injured. The margin of the body is bordered with brittle waxy projections which break at a touch, and cause a copious flow.

The Mammoth Scale is probably a native insect which under normal conditions is closely held in subjection by natural checks such as lady-birds, internal parasites, and fungus disease. Despite its production of thousands of eggs and its consequent capability of rapid multiplication, as now manifested on the kopje, it is probably a rare insect ordinarily and not much more numerous in one season than another. Occasionally insects such as this enjoy temporary relief from their checks, and then suddenly become extraordinarily abundant even where unnoticed before, although always present, and they may then continue to increase for a succession of generations. Sooner or later, however, the checks catch up with them again and restore the old balance. Insects introduced from one country to another may leave important checks behind and find none in the new home to take their place. This is specially true of scale insects which, because of their being attached, may easily be carried with their food plants to entirely new surroundings, while their winged enemies are left; and thus is explained much of the importance which many scale insects have assumed as pests of fruit trees. The original home of some well known and now practically cosmopolitan species is unknown, and all attempts to find and establish efficient checks for them have proved futile. It has not unnaturally been suggested that the Mammoth Scale is a recent introduction to this country, and that it will go ahead multiplying indefinitely without meeting with efficient enemies, unless such are brought to it, but there is little evidence to support this view. The insect is so conspicuously large that it could hardly be overlooked if it occurred anywhere on nursery stock; and if it had been observed, its unusual size would almost certainly have led to its having been brought to the attention of Entomologists. Then the nurseries of the Southern Colonies, from which most of the plants introduced to Salisbury have come, are systematically inspected for pests, and no trace of this insect has been found in any one of them. On the other hand, the Msasa on which the insect appears to flourish best, is a common native tree of widespread occurrence in Mashonaland; and similar cases of native scale insects unknown to science having become tremendously abundant on indigenous plants in South Africa can be cited.

As a result of my observations of the past week, I am led to think that before this outbreak the Mammoth Scale had died out or become exceedingly scarce in the vicinity of Salisbury, or else that some circumstance had prevented it ever having reached here, although present on the Msasa elsewhere in the country. Under such conditions it might have recently become established on the Kopje, without its ordinary checks, through the agency of birds or flying insects. For instance, it may have been temporarily common on a tree many miles away just at a time when a swarm of locusts happened along, and when the young scale insects were moving about, many of the young might have unconsciously wandered on to locusts and have thus been transported to the Kopje. In this connection it may be mentioned that a swarm of the strong flying red-winged migratory locust slept on the Kopje and frequented the Msasa trees there on Tuesday night.

The infestation probably began several years ago not far from the end of Albion Street in the narrow, often broken belt of Msasa trees which extends along the northern prolongation of the Kopje west of Pioneer Street. Although public attention seems only to have been drawn to the matter during the past year, it appears that a resident in infested areas had noticed it by reason of the unpleasant drift of "honey-dew" as much as three years ago, and it is quite probable that the insect had then already been on the increase for some years, as until it is numerous on a tree the drift is not sufficient to attract attention. Another resident of the locality says that he saw it in his garden six years ago. That the spread has been from the northern part of the ridge southward is indicated by the relative abundance of old shells there. At present most of the Msasa trees for a distance of about one thousand yards, from the northern end to the vicinity of Mr. Coxwell's house, are grossly infested. It seems to have been thought that the infestation was confined to this area, but it will be shown that such is far from the case. Hereabouts the insect thickly studs the trunks and larger branches, often in an unbroken layer yards in length on the limbs, and the general appearance of the trunks and of the ground beneath many of the trees is as if thin treacle had been sprayed over the surface.

The Msasa is the only wild tree infested to a serious degree unless it is the related Madondo, which I have not learned to distinguish. Some other native plants are slightly infested, but it is doubtful if more than a very few of the vast number of the insects which attempt to feed on them succeed in reaching maturity. The same may be said of nearly all the cultivated plants growing in the area, but a few silky oaks (*Grevillea*) are being attacked to a disquieting degree, and in one garden there is a casurina and an hibiscus from which a number of developing insects were taken. A very few are also said to have been removed from grape, citrus, and eucalyptus, and a flamboyant tree in one garden has been rather badly attacked. The Msasa, it should be mentioned, is by far the most abundant tree on the Kopje and elsewhere around the town.

No natural enemies appear to be attacking the scale at the present time. I was hopeful of finding positive evidence of internal parasitism of some stage, but in this respect I have been quite disappointed. The integument of the females is now extraordinarily tough, and it may be that this fact deters parasites, which an examination in the proper season might reveal in younger stages, yet no trace of parasite work was found on the dead bodies of such young insects as were found. Pupa shells of a species of lady-bird, apparently *Rodolia iceryae*, are numerous on many of the infested trees, and a natural inference is that the grub-like larvæ of this beneficial creature feeds readily on the young scale insects. For the present, however, the lady-bird is not amongst the trees in any stage, and it is not likely that it will appear in sufficient numbers when the eggs hatch to eat off anything approaching the increase of the pest. This lady-bird is dull black and has dull red markings on the middle and front part of the back, and is about the size of a sweet pea seed. In the absence of any record of studies on the natural checks of any close relative, I am unable to say what the nature of the most effective enemies of the Mammoth Scale may be, that is whether they are internal parasites, lady-birds, predaceous caterpillars, or otherwise. There would seem to be a splendid opportunity for some small predaceous insect to crawl into the egg-sac from beneath, and there revel amongst the eggs.

As already intimated, the scale is present to a slight degree over a far greater area than the heavily infested locality. Mr. Cameron and I have spent several days in searching for it elsewhere in the vicinity of the town, and while we found no extensive infestation away from the northern ridge of the Kopje we found reason to believe that it is spread from Hillside on the east to the Transport Camp on the west, and from the northern limits of the town and the Ayrshire railway crossing beyond the Police Camp on the north-east, nearly to Ardbennie on the south. Some groves of Msasa within these confines seem to be quite free of the insect, and so few specimens were seen in most places as to suggest that they had been brought from the Kopje. A short visit was paid to Hartman Hill owing to a rumour that it was on the Kopje there, but no trace of it was found in that vicinity. However, it is reliably stated that an old shell was found on the hill between three and four years ago. No indication of its presence was found in the Slaughter Poles enclosure, nor in the fine groves north and south of Hillside, nor any of those along the north and south roads to Simpson's farm.

The most abundant infestation away from the central area is in the vicinity of Government House and the Police Camp, particularly the latter, where old shells as well as maturing females are not uncommon. At Hillside only stains where specimens had unmistakably been attached were seen, but to the east and south of the cemetery an occasional old shell as well as live specimens were found. Old shells as well as living insects were found here and there all over the Kopje, but always scarce away from the main infestation, and particularly so on the ridge that extends to the westward. The infestation is also very light at the Transport Camp.

From the appearance of those that seem to have been infested longest, it does not appear probable that that scale is capable of actually killing any large proportion of the Msasa trees which it attacks. Very few of the trees attacked are now dead, and these only small ones which were dominated by others. Many of the smallest species of scale insects injure their food plants much more seriously than this largest of all species appears to do, and indeed it looks as if the Msasa became unsuitable for the insect before the damage reaches a degree at which the

life of the tree is endangered. A number of trees in the middle of the infested area, on which old shells are still very abundant, are almost free of living insects. Cast skins show that vast numbers of young of the present generation were present, but these insects must have perished or have wandered off to healthier trees. The trees look as if they would speedily recover if they had the opportunity, and their greatest danger now is probably from boring insects, to which weakened trees are specially liable.

If I thought the scale an introduction from an over-sea country, I would unhesitatingly advocate drastic measures to secure its extermination, including the cutting down of all the Msasa trees in the central area; but in view of the probability that it is native to the country and will sooner or later be found by enemies which will quickly reduce it to the state of obscurity from which it arose, I cannot recommend that a tree be destroyed on account of it. If left to itself, however, it is likely to prove much more of a nuisance in the coming season than in the past. Its spread up to the present has probably been considerably hindered by the frequent open spaces it has had to cross, but from where it has now reached in numbers there is an unbroken succession of Msasa trees over the entire Kopje, and its advance is likely to be much more rapid. Hence I deem it highly desirable that repressive measures be taken, and I earnestly recommend that a gang of boys be set to work to scrape off or crush all the insects that can be reached from the ground, or by the aid of ladders. This work should not be delayed, as many of the insects have begun to lay, and it is possible that eggs in those left on the ground may hatch, and the young get on to trees. Where little extra time is necessary to accomplish it, the insects scraped off should be collected and burned or otherwise destroyed. I expect that this means of lessening the pest would prove very much cheaper and more satisfactory than spraying under the conditions which exist here. It is probable that very effectual work might be done by spraying after hatching occurs, but as a costly contact wash and powerful pumps would have to be used, and as the young go far beyond where the adult females are found, and thus would necessitate the spraying of outermost parts of the trees, the expense would be great. Moreover, many of the lady-birds and other insects which

gather to feed on the young scale insects would be destroyed. If the great bulk of the insects is disposed of within the coming month, it is not improbable that the enemies that collect to feed on the young will nearly complete the work of destruction. But until the natural enemies suffice to prevent an increase, the adult females of each generation should be removed soon after they settle on the heavy wood. If systematically conducted this work of repression should not prove expensive. The trees about the Police Camp should be cleaned of the few insects which occur on them, but in general I do not suggest that the work be undertaken except where the insect is easily found on the trees. If mating is necessary for its reproduction, the insect is likely to die out where Mr. Cameron and I found it away from the main infestation and the Police Camp, owing to its scarcity and the consequent unlikelihood of fertilisation being accomplished. But if mating is unnecessary, innumerable sub-centres are already formed in which the insect will gather strength and from which it will in time spread if it is not checked. This contingency should be borne in mind, and an annual inspection made of the entire Kopje, and of valued groves elsewhere where infestation may be suspected, until the danger of further mischief has passed. The main infestation on the Kopje may be likened to a steady advancing fire, and the old scales scattered beyond to sparks thrown off by that fire. My recommendation is to oppose the main fire and to see if the sparks will not die out of themselves.

Finally I recommend that publicity be given to the outbreak, and that the public, particularly Government officials, throughout the area in which the Msasa tree grows be requested to be on the watch for the insect, and to send in specimens of anything they take to be it, with information as to its abundance. An investigation of every occurrence that offers any promise of yielding parasites should be made, and steps taken to introduce any such to the Kopje. Where the scale is at all common, shells of the past generation are almost sure to be present, and there is no confusing these with any other insect. They are about of the shape and size of a half walnut, and of a deep chestnut brown in colour. The developing females are flatter and usually have the grey-green colour of a lichen. They remind one of small lim-

pets. Around the sides is a fringe of about two dozen short, cleft, conical projections of dull coloured, waxen plates, below each of which a bunch of fine bristles protrudes for an eighth to a quarter of an inch. If any doubt remains on the identity when a living insect is being examined, an attempt to remove it from the bark should settle the matter, for there will at once exude some of the tenacious, opaque, yellow fluid that has been described. The stain left on the bark from where one of the insects has been removed is also characteristic. It is a well defined, oval, flour-white spot, the size of the insect that made it, with a conspicuous roundish break a little nearer the top end than the middle. The break marks where the mouth part was inserted, and if the bark be cut into, a discoloured area will be found beneath it. This stain spot left by an insect catches the eye more quickly than an insect itself, and in our scouting work Mr. Cameron and I saw many more of them than we did of living insects. Perhaps birds had torn away the insects that left them.

In conclusion, I may state that on my return to Cape Town I plan to study the affinities of the Mammoth Scale with other species; and should I in this or any other way get any evidence that the insect is an exotic to this part of Africa, I will acquaint you at once.

(Sgd.) CHAS. P. LOUNSBURY,

Cape Government Entomologist.

Salisbury, 29th August, 1908.

Importation of Foreign Bees into South Africa.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Sir,—

In view of the fact that the Cape has already passed a law prohibiting the importation of foreign bees, and also owing to the agitation that is now being raised in the Transvaal for similar legislation, I take the liberty of forwarding you copies of the correspondence that has passed between my firm and a certain party in the latter Colony in the hopes that it will elicit the opinions of Rhodesian beekeepers on the subject.

My opinion and that of my partner is decidedly averse to total prohibition, though we are in favour of stringent supervision.

It is a curious fact that although the Cape farmers can boast of the finest honey bearing flora in the world (*Protea mellifera*), with their native bee they have not yet been able to supply themselves with honey, much less export it to other South African Colonies, and now they have prohibited the importation of the only bee that is likely to lift them out of the rut.

I am,

Yours faithfully,

(Sgd.) GEORGE HURTZIG.

Gwelo, July 28, 1908.

The following was sent by Messrs. Barbour and Hurtzig to Mr. D. Cairncross, Pretoria, in answer to his circular letter of 14th July calling the attention of beekeepers to the desirability of prohibiting the importation of foreign bees into South Africa, which was quoted in the August Journal.

D. Cairncross, Esq.,
Box 163, Pretoria.

Dear Sir,—

Your circular letter of the 14th. July, addressed to our Mr. Barbour, has our attention, and has caused us much serious thought.

Although at one with you with regard to the danger of foul brood, we are not prepared to recommend the employment of such drastic measures as you propose to prevent its introduction into this country.

As you must be well aware, foul brood is carried in comb and honey, and is transmitted by the habit bees have of robbing each other. We do not therefore consider that it is absolutely necessary in order to prevent the introduction of foul brood that all importation of foreign queens should be stopped, as when imported through the post in the small Benton cages that are used

for the purpose with specially prepared food, and from reliable dealers, we fail to see that there is danger of infection.

In the first place, in the long journey from Europe and America, a foul brood infected queen with her attendants must inevitably die, if forwarded through the post. On the other hand, bees in nuclei or full colonies, if bought indiscriminately in England or the Continent would be quite capable of introducing the disease.

But if instead of entirely prohibiting the introduction of foreign queens, the importation of same with proper safeguards were allowed, we fail to see that any harm would result.

Do you not, and do not the Coast Colonies allow the importation of plants, bulbs, etc., from reliable parties in Europe with safeguards? And is it not a fact that notwithstanding the prevalence of Codlin moth and other injurious pests in the Cape Colony, apples and other fruits, potatoes, etc., are allowed free importation into the Transvaal? They certainly are here, and without even protest.

We are fairly large apiarists, and have put a decent amount of money into our honey farm, and we are perfectly convinced that if our Government should prohibit the importation of Italian queens, we might as well burn our 200 odd hives, and consider our investment a dead loss.

We might mention that our wild bee appears to differ from the species that is indigenous to the Transvaal and Cape Colony, in that it is vicious, restless and dangerous to man and beast. In fact the only use for it as far as we know, and other Rhodesian beekeepers are probably of the same opinion, is for the Kafirs to rob from the bees whenever and wherever they find it.

There is another point we would like to refer to before closing, even if we are trespassing on your time, for which we apologise, and that is: What about the importation of honey and the consequent attendant danger of foul brood?

You, as a honey producer, know that bottled honey is not subjected to sufficient heat to destroy the foul brood bacillus, and you also know that there are plenty of unscrupulous people at home, more especially where the Colonies are concerned, who would think nothing of

bottling foul brood honey and selling it, either for home consumption or export, particularly the latter.

In conclusion, we are glad to have received your letter, as it will put us on our guard and enable us to make representations in the proper quarter, in order to prevent as far as Rhodesia is concerned the passing of hysterical legislation which would do a great amount of injury, if not prove a fatal blow to the bee-keeping industry of this country, at present only in its infancy.

Yours faithfully,

(Sgd.) BARBOUR & HURTZIG.

Gwelo, Rhodesia, July 20th, 1908.

The following letter on this subject has been addressed to the Secretary for Agriculture by Messrs. Barbour and Hurtzig, Gwelo:—

Sir,—

In the "Rhodesian Agricultural Journal" for August, 1908, page 552, individual beekeepers are requested to communicate to you their views on the subject of the prohibition of the importation of foreign bees into South Africa.

On the 28th July last we forwarded some correspondence on the subject to the Journal, but being probably too late for insertion in the August number, we now repeat our opinion on a subject on which we feel very strongly.

After some years' actual experience with the native bee, we are quite certain that, if the Rhodesian Government sees fit to prohibit the importation of foreign bees, and more especially Italian bees, there will never be a honey industry in the country.

It is true some few enthusiasts will take up the native bee as a hobby, but it will never develop into an industry for several reasons, amongst which the following deserve consideration:

The native bee, no one living in the country will deny, is of a vicious and extremely irritable nature, and unless kept entirely away from any living animal, it is apt to run amok and kill everything within a radius of some hundreds of yards.

We are aware that some people deny this, but let them live in a part of the country where there is a honey flow and they will come to the same conclusion; and we contend that it is practically impossible to farm the native bee commercially.

We are not now taking into consideration the enthusiast who may have half-a-dozen hives, and thinks he is bee-keeping, but the man who would take up beekeeping on business lines with the view to making a living out of it, and we maintain that unless he can stock his apiary with Italian or some other suitable foreign bee, he will never make a success of it in Rhodesia.

We are aware that foul brood is a bad bee disease, and should be kept out of the country if possible, but we say the importation of foreign bees should be permitted under regulations that should be rigorously enforced, and not prohibited altogether.

For instance, queen bees from reliable dealers consigned through the post in what are called the Benton travelling cages are no more likely to import the disease than is the free importation of honey in bottles. On the other hand, queen bees coming out in old combs that may or may not be diseased should be most certainly destroyed, and not only destroyed but burned, and not put in quarantine as they appear to be doing in Cape Colony at present.

We, as practical beekeepers, could give many reasons why the importation of foreign bees should not be prohibited in Rhodesia, but not wishing to trespass further on your time, which we are aware is valuable, we will confine ourselves to the above.

Cotton Growing in N.E. Rhodesia.

There are a considerable number of cotton plantations laid out in North Eastern Rhodesia. On the Chutica Estate there were last year 300 acres under cotton.

The altitude of this estate is about 1,300 feet above sea level. The rainfall is 40 to 45 inches from December till April.

The river Luangwa runs through the estate and along its banks the soil is a rich alluvial on which cotton grows remarkably well—large returns being yielded having a very good staple.

Away back from the river the cotton does not yield such big returns, the soil being of a light red character, but showing signs of improving under extended cultivation.

The two kinds of cotton that have done best on the estate are Egyptian "Abassi" and "Afiffi," which yield about 280 lbs. per acre per annum. The plants are cropped for two seasons.

"Caravonica" or "Silk Cotton," which is essentially a tropical plant, is being tried on this estate. It takes two years to come to maturity, and is a perennial lasting a number of years.

The first year's growth here looks very promising. It thrives best where there is a distinct "wet" and "dry" season, the dry season being used for picking, since the ripening continues throughout the dry season, or a period of six months.

"Caravonica" is of much finer quality than ordinary cotton, while the yield is also very much larger. It is worth 1s. 2d. per lb., while ordinary cotton is at 8d.

Bobs Rust-proof Wheat.

In the June issue of the "Agricultural Journal," page 386, in giving the origin of this wheat, its bringing out was attributed to Mr. Blore, of Rivenhill Farm, O.R.C., from whom the wheat was obtained by this Department. The statement that the wheat was evolved by Mr. Blore is misleading, since this honour belongs to Mr. Farrer, of New South Wales, Australia.

The "Agricultural Gazette of N.S.W.," vol. 17, 1906, states the origin of Bobs rust-proof wheat to be "the result of a cross between a sport from Blounts Lambrigg (one of the Defiance Group) and Bald Skinless Barley (Nepaul Barley)."

Three years ago the Department of Agriculture, O.R.C., imported Bobs rust-proof wheat from Australia, and after testing it at the Divisional Experimental Station made free distribution of this promising spring



Photo by]

Caravonica Cotton, Chutica Estate, N.-E. Rhodesia.

[C. O. Thompson,



Photo by]

Cotton Plantation, Chutica Estate, N.-E. Rhodesia.

[C. O. Thompson,

variety, consequently Mr. Blore received through the O.R.C. Agricultural Department his first consignment, which gave him, after two years' cultivation, a record crop.

We regret making the mistake concerning the origin of the wheat, and take this opportunity of giving the credit where it is due. The whole of the consignment obtained by this Department has now been distributed among the farmers throughout Rhodesia, and it is hoped that it may prove as successful in Rhodesia as it has done in the O.R.C.

Notes.

BULLOCK DRIVERS FOR FARMS AND TRANSPORT.

An advertisement placed by a Rhodesian firm in a Bloemfontein paper calling for applications for bullock drivers at a wage of £3 per month and rations has resulted in a very large number of applications being received from young Colonials experienced in working cattle who are willing to come to Rhodesia as drivers, and to enter into an engagement for a year or more.

As considerable difficulty is likely to be experienced in getting bullock drivers either for transport or farm purposes, Rhodesian farmers may be glad of the opportunity of securing the services of steady reliable white men who should be exceedingly useful on their farms.

Inquiries for further particulars should be addressed to the Farmers' Agency, P.O. Box 73, Salisbury, which has a large number of applications on hand.

EGYPTIAN CLOVER.

The Egyptian Clover seed was imported by the Department and distributed to farmers in Rhodesia last year. Up till now there has been no report come to hand regarding how it grew.

Mr. Watson, at Kilnmuir, informs us that he sowed the seed on February 4, which he considered too late, but it was that time before the seed arrived. He gave 15 lbs.

per acre, when the seed germinated rapidly and thickly, but did not stool out. It grew to about 18 inches high, and flowered, but did not come to maturity owing to the late sowing. Stock were very fond of it, the greater part of it being cut and used as stable feed for horses.

It was grown on virgin soil, but well cultivated. The land would have been poor for mealies. Mr. Watson considers the clover very promising, and we should like to have some information about it from others who have tried it.

In the August issue of the "Journal" an article appeared on "Cheddar Cheese Making," by R. Silva Jones, which is concluded in the present number.

We now have the pleasure of seeing the author in Rhodesia, and have the opportunity of hearing his opinions on the prospects of establishing a dairy industry in Rhodesia.

The value of the experience hitherto gained in the attempts to carry on the making of dairy products on a large scale has been to show that this branch of agriculture is not so easy nor so simple as it looks.

As a matter of fact, dairying is the most difficult to acquire a working knowledge of among all kinds of farming in every country.

The absence of professional skill has operated more heavily against the production of dairy products than any of the other branches, and the presence of Mr. Jones will no doubt be taken advantage of by having his services utilised in assisting to establish a dairy industry—rendering the making of butter and cheese a profitable industry in Rhodesia.

SEED POTATOES FOR THE TRANSVAAL.

The Director of Agriculture for the Transvaal has issued a warning to importers of seed potatoes that "in view of the fact that large quantities of seed potatoes from France and Germany consigned to this Colony last season were found affected with white rot fungus (*Nectria solanipers*), it is the intention of the Transvaal Government to safeguard the interests of local growers by order-

ing the destruction, or return to the consignor, of all potatoes found infected with this fungus to the extent of one per cent. and upwards."

A number of stock-owners in Matabeleland and Mashonaland have combined in bringing out a consignment of Aberdeen-Angus bulls direct from Scotland, the home of the breed.

There are a dozen under order to arrive about the beginning of December. The bulls are being selected expressly to suit the present needs of the country with reference to the class of stock they are coming amongst. They are ordinary pedigreed bulls for breeding commercial cattle, and are neither fancy priced nor special show specimens.

Besides these, several more are being personally selected by Rhodesian farmers presently in Britain, while several Shorthorn bulls are being shipped at the same time. Altogether more than twenty pure bred bulls are being imported from Britain for this season.

Reviews.

*"Agricultural South Africa," the first number of which has lately been issued, promises to find its way to the homes of farmers, and it is also full of interest to everyone who desires to promote and support the agricultural industries of South Africa.

All the articles are written by men having every qualification, both in knowledge and experience, so that the views submitted and the information given are reliable and in every way worthy of attention.

Suggestive ideas are sought to be put forth that would lead to the adoption of improvements in the methods of agriculture now prevailing, rather than advocating bringing in new products and new industries.

* "Agricultural South Africa." The Farmers' Annual. Printed and published by Cape Times Ltd., Cape Town. Price one shilling.

Mr. P. J. Hannon, in an article "A Plea for the Plough," thus remarks: "No one is more conscious than I am of the fatal absurdity of *doctrinaire* speculation in methods of agriculture, and nobody has, perhaps, more reason to acknowledge the predominating importance of local experience; and certainly I shall henceforth be the last to prescribe 'golden rules' and 'certain remedies' in Cape farming methods; but the careful observation of nearly three years has borne in upon me the conviction that modern systems of cultivation, judiciously applied, with the employment of all spare labour available, will ensure at least as large returns as are possible under the best conceived system of grazing the veld.

The aim is not that the herdsman shall grow less, but that the ploughman shall grow more, and the natural sequence, it is contended, will be a higher standard of comfort for both. I have used the words 'as large' in the comparison I venture to submit, because, clearly, if the net returns of the two systems—*i.e.*, pastoral, and pastoral and tillage—are equal, it is a national duty to adopt that which employs the greater number of workers, and adds most to the national wealth. A cultivated country is a land of homesteads and families, thriving villages and varied and remunerative industries, and is the outcome neither of Government doles nor the special dispensation of Providence, but of the energy and public spirit of a people regulated by the dictates of economic intelligence."

Dr. A. Theiler, Government Veterinary Bacteriologist to the Transvaal Government, contributes an article on "Veterinary Science in South Africa," from which we quote: "Although every endeavour is made in South Africa to promote the agricultural development of the various colonies, the fact undoubtedly remains that the larger portion of the land is unsuitable for this purpose exclusively. The history of the past has proved that our country is very suitable for stock-breeding of all kinds, and we can safely conclude it will be even better in the future if we are in the position to remove both the obstacles which occur from time to time and those prevailing at present. The greatest drawbacks in the past have been the diseases occurring as epidemics sweeping through the whole sub-continent. Some of these fortunately have completely disappeared, and some have unfortunately remained. In addition to these a number of maladies

exist, typical in the whole of South Africa, and unknown in other parts of the world, while others are confined to certain areas. To remove these obstacles must be the aim of all the Colonies.

"The fact is quite apparent that it is not so much within the scope of the farmer to eradicate these pests, although his co-operation is necessary, as it is the duty of certain experts known as veterinary surgeons; and yet it is hardly credible that only recently South African statesmen have realised this fact. It is a noteworthy fact that rinderpest furnished the impetus to the various Governments to seek scientific aid. In other words, it became apparent that prospective ruin could only be averted by proper scientific measures. In Europe, in the 18th and 19th centuries, it was this reason that led to the foundation of veterinary colleges, the training of veterinary officers and the introduction of legislative measures, the result being that the Continent was freed from the devastating plagues, and since then stock-breeding has flourished.

"South Africa similarly has had the experience that the adoption of legislative enactments, based on scientific principles, can adequately cope with contagious diseases."

Dr. Theiler thus remarks on the position of veterinary surgeons in relation to South Africa: "The duties of a veterinary surgeon in South Africa do not end after dealing with contagious diseases and investigating into their nature. I have always considered a South African veterinary surgeon to be more of a teacher than a surgeon. The conditions of the countries, with the farms so far apart, limit the field for a private practitioner to the populated centres, and since the Government Veterinary Surgeon has to attend to his official duties, it is impossible for him to be at the call of every farmer.

"In cases where an animal falls sick or meets with an accident, the farmer must be able to help himself, but to do so he should have a certain amount of technical knowledge. In order to acquire this, he will either have to study books on the subject, to ask advice by letter, or to undergo training at a school. The final duties of a South African veterinary surgeon are in connection with healthy animals and in advising the hygienic and zoo-technic principles to be adopted in breeding the various classes of stock.

“Whilst travelling round the country on his official duties, a Government Veterinary Surgeon enters so much into contact with farmers that it will be of the utmost advantage when he is in a position to discuss these subjects with the farmer, whose very progress in the improvement of stock lies in the adoption of scientific principles.”

Dr. Theiler's article is largely given to the need for pursuing “Tropical Veterinary Science,” commending the recent establishment by the Transvaal Government of a Research Laboratory where research investigations can be performed in this field, and where provision is made for veterinary education on the lines required for South Africa.

Mr. C. P. Lounsbury, in an article on “Locust Plagues in South Africa,” gives valuable addition to our rather meagre knowledge concerning whence locusts come and whither they go. He has made studied research along the lines of actual observation in seeking to give the “Factors Accountable for Invasion,” and also the “Methods of Destruction.”

This article will be read with great interest in Rhodesia as well as in the other Colonies troubled with this plague.

There are many other valuable papers given in this publication. Sheep and wool, ostrich farming, viticulture, etc. Mr. G. M. Odum contributes an article on “Tobacco Culture in South Africa,” which is largely given to the description of the industry in Rhodesia.

A large number of illustrations are given throughout.

“Delagoa Bay Gazette.” We have received the first number of a new publication from Lourenco Marques. The “Delagoa Bay Gazette” has been published with the view of setting forth the great possibilities of the superb harbour and of the vast agricultural resources of the surrounding provinces.

Although in Portuguese territory, and among Portuguese people chiefly, this paper is printed in English, for it is anticipated that by opening up to a wider circle the natural advantages belonging to the place—letting them be known to the stranger both as a commercial and as a health-seeking resort—Lourenco Marques will be patronised more largely than hitherto.

Delagoa Bay is not without interest to Rhodesia commercially, and we accord our best wishes to the success of the "Gazette" in pursuing its mission. Excellent photos of the bay and harbour are given.

"The Agricultural Journal of British East Africa" is a well got up publication issued by the Agricultural Department. It is a quarterly Journal, and the second number has now reached us.

Much of the agriculture in British East Africa is carried on under similar conditions of soil and climate as Rhodesia, particularly as regards stock-raising.

A good deal of information useful to both countries is to be gained by interchange of opinions in discussing common agricultural problems and the way they are to be faced, and from time to time we shall take note of those points and the way they are being dealt with.

Calves from Native Cows.

These three cows with their calves belong to Mr. W. H. Williamson, Bendaugh, Salisbury. The calves are the first cross from the pure-bred Friesland bull "Cecil John" that took first prize at the Bulawayo Show in 1906.

There are already over thirty of these calves this season, and it is remarkable with what uniformity the Friesland type is reproduced; whether the cows are Mashona or Humped, the calves are in every single in-Frieslands, while the hump is entirely gone.

In this case it can hardly be called "grading," since there is at once a change of type accomplished with the first cross, and the blend can scarcely be noticed.

As the crossed heifers grow up, it is Mr. Williamson's intention to mate them with an Aberdeen Angus bull, with the view of producing a first class beef animal.

Importation of Shorthorn Bull.

The bull "Red Ensign" was bred by Sir James Sive-wright, Tulliallan, Fifeshire, N.B. He was calved in February, 1906, and is thus two and a half years old. He was first imported into Cape Colony little more than a year ago, and Mr. Browning has now secured him for service amongst his herd of dairy cows.

The bull looks a splendid animal, and well represents the very long pedigree which accompanies him. The bull as an appearance of robustness and vigour about him that at once dispels any notion that an animal so good as this is not fitted for the country.

Locust Plagues in South Africa.

FACTORS ACCOUNTABLE FOR INVASION. METHODS OF DESTRUCTION.

By CHAS. P. LOUNSBURY, B.Sc., Government
Entomologist.

(Reprinted from "Agricultural South Africa.")

Two distinct species of plague locusts ravage the Cape Colony, the Red-winged Locust and the Brown Locust. The former is the larger of the two, but the one of less importance. It is the plague locust of Natal, the eastern low veld of the Transvaal, and a strip of coast in the east of Cape Colony. Its recent visit into the last-named Colony began in 1893, and two years later its vast winged swarms covered most of the country to the coast east to south-east of Griqualand West, and, south of the coastal range of mountains, swarms migrated early in 1896 westward to Swellendam. Since that year it has been confined to the eastern seaboard. Few swarms were reported in 1906 either in the Colony proper or in the Transkei, and fewer still in the early part of 1907, when it was considered not improbable that the long invasion was practically finished. But there was great trouble from the



Photo by]

British-bred Shorthorn Bull, "Red Ensign," imported by W. H. Browning, Salisbury,

[H. C. Thaxtils.

species in Natal during the 1906-1907 period, and at the time of writing there is some ground for fear that the present condition of the Cape is merely a short lull before another storm.

The Red-winged Locust should not be confused with the large, clumsy, heavy-bodied, gaudy-coloured locust which often occurs in tiny swarms in the Western Province; but when the south-western districts do get large migratory swarms of locusts they are probably always of the true Red-winged species. At long intervals the Cape Peninsula and the adjoining districts have been ravaged, and many an up-country farmer fervently hopes that this fortunate section of the Colony may soon suffer again, not from any ill will towards the vine and fruit farmers, but in order that the Government in Cape Town may be brought to realise the gravity of the locust problem inland. The last invasion of the Cape and surrounding districts occurred in 1843, on which occasion vast swarms perished in the sea and were returned by the waves with the result of impressing townspeople as effectively in death as they had the country people in life, though in quite a different manner. The stench was overpowering. Previous invasions of South-western districts by locusts are recorded in 1653, 1687 and 1747, and there is little doubt that they were of the Red-wing species. The 1747 invasion was particularly severe, the garden crops and pasturage of the then very small Colony being destroyed. Many cattle and sheep died of starvation in consequence, and meat doubled in price.

The Brown Locust was the chief migratory locust in 1907. It is pre-eminently an inland species, swarms rarely reaching the eastern seaboard and perhaps never the southern and south-eastern. The present invasion began in 1890, and reached its height in Cape Colony in 1892 and 1893. Invasions of this species have been of much greater frequency than those of the Red-winged, and the idea has prevailed since 1893 that the pest would shortly disappear, as it is credited to have done after a few years of abundance in times past. This hope of an early abatement of the plague without organised assistance on the part of man has doubtless been a potent factor in the Government neglect to wage a vigorous campaign against it. Yet sixteen years have passed since the first swarms came out of the arid north-west, and al-

though the numbers of the pest have fluctuated very considerably, and in a few seasons have been relatively insignificant, there is still no sign that the invasion is approaching a termination.

The first inland invasion of locusts to which we find definite reference began in 1797 (about eleven years after the site for Graaff-Reinet, the first Karroo town, was decided upon) and lasted until about 1808. Subsequent invasions took place in 1824-1831, 1843-1854 and 1862-1876. Thereafter until 1890 the eastern part of the country seems to have been quite free, but some swarms are said to have appeared in the drier north-central portion of the Colony in this interval.



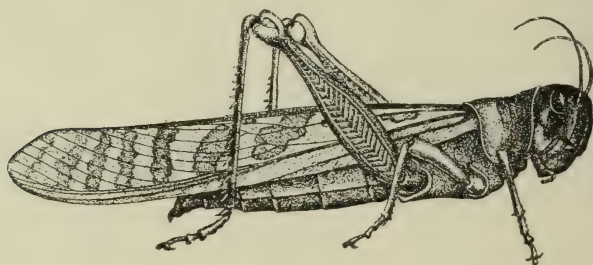
Red-Winged Locust—Wings Expanded.

It is quite safe to say that the Kalahari Desert and the country round about it is the centre from which the more habitable parts of South Africa derive the initial swarms of an invasion, and the pest spreads east, west and south, and apparently northwards as well. Somewhere or another in that vast region it is probable that the insect is present every year, and it is not at all unlikely that it is also a permanent inhabitant of extensive tracts of country

south of the Orange River, as in Bushmansland and portions of Griqualand West. The circumstances which give rise to the enormous swarms which at intervals migrate from these parts are still shrouded in doubt, which future observations, extending over an indefinite number of years, alone can dispel. However, the writer conjectures from the meagre knowledge obtainable—(1) that a period of excessive abundance of this species of locust is terminated chiefly by the agency of locust birds and fly parasites, and that therewith the pest disappeared from notice. In the parts of the country where the conditions favourable for life are most uniform from season to season, enough of the enemies may permanently remain to prevent excessive multiplication, and perhaps over large areas, as, for instance, the midland and eastern districts of the Cape, to bring about total extermination; (2) that meanwhile, in regions like Bushmansland and the Kalahari, where longer droughts prevail, the enemies are more or less completely lost through the entire absence of any food for them, while the pest is preserved in the egg stage, and thereafter left to be controlled principally by the limitation of its food. Then (3) that by the occurrence of an exceptionally favourable season, when there is an abundance of eggs in the ground, immense swarms are matured, which tend to migrate on the wind to distant parts. Naturally the bird and insect enemies, being scarce, are unable to cope with great swarms for a few seasons, and during this time the pest continues to multiply and spread, it now having unlimited good country before it. If no fresh swarms arrived the better country would, it is conjectured, become cleared of the pest by its increasing enemies soon after the climax of the invasion was reached; but reinforcements to a greatly varying extent appear to come from the desert parts for successive seasons. It is more difficult to suggest an explanation for the incoming swarms that thus prolong an invasion, but it is possible that they are in reality swarms which were hatched in the better country and which migrated desertwards soon after acquiring wings, with the result of temporarily throwing off their enemies to a large extent, or else that they are the immediate descendants of such swarms. Although it has not been demonstrated that very extensive migration of newly-winged swarms towards the desert occurs from the

country south of the Orange River, such a movement appears to be the rule in the Transvaal, according to the late Transvaal Entomologist; and altogether there is much ground for suspecting that the occupation of the invaded territory is kept up, directly or indirectly, entirely by the swarms which mature therein.

It is now established that in South Africa locusts can be fought most economically when they are in the voetganger (hopper) stage; and persons who have had experience with the measures now advocated are probably all agreed that the destruction of voetgangers *that threaten crops* is generally very profitable. Statistics collected by the Natal Entomologist on the result of the 1906 locust campaign in that Colony show that the crops, which otherwise would in all probability have been devoured by the pest, were valued at more than ten times the expenditure. Unless there is certain to be ample food for both pest and stock, it is also probably very profitable in most dis-



Red-Winged Locust—Wings Closed.

tricts to destroy voetgangers *that threaten the pasturage* only. But whether or not it is economical to destroy locusts in one district because of the damage which they or their descendants might do in other districts is at present very problematical. If thereby an extensive invasion might be averted, it certainly might pay to incur an enormous expenditure in destruction measures even in sparsely-settled, non-agricultural country, where locusts are regarded as being as much a blessing as an evil; but if all that is practicable will not materially lessen the extent of an invasion of better parts, it seems absurd to undertake destruction in parts of the country where it is not clearly profitable on local considerations.

An extremely urgent need in South Africa is more complete information on every phase of the locust problem. It is important to ascertain the areas in which the pest may survive during the years when it appears to be absent from settled parts; to learn definitely what conditions account for the periods of excessive abundance; to what extent invasions are kept up by swarms originating in inaccessible territory, and whether or not many swarms from districts where extermination is practicable return to desert parts to breed. Clearly such questions can be satisfactorily answered only through observations made throughout the whole of South Africa, subject to visitation. In the portions where active measures against the pest are undertaken, there is still more direct application for data on the occurrence and distribution of swarms, inasmuch as such information is necessary to enable the Government concerned to be prepared with supplies. For this more direct object Natal has had a system of reporting in operation for ten to twelve years in connection with its Locust Destruction Act. The Transvaal began two years ago, adopting as its method the broadcasting of many thousands of postcard forms, on which the police, farmers, and others were requested to note the passage of swarms and other information. The Cape did not organise any comprehensive system of locust destruction under Government supervision until last year. Off and on for the past dozen years, however, it has collected information from field-cornets and others; and early in 1906 my Branch began a methodical and almost complete system of collecting data, which it is hoped will be continued indefinitely. The system is a dual one, consisting of immediate card reports by private parties and monthly statements by the police. With the assistance of the local Magistrates in selecting them, one or more parties in every field-cornetcy throughout the portion of the Colony subject to visitation was appealed to to furnish us with a postcard report (1) whenever swarms arrive or pass; (2) when eggs are laid; (3) when eggs hatch; (4) when young locusts get wings, and (5) when new swarms leave the vicinity. About 500 voluntary reporters have thus been secured, and these in a general way serve to keep us posted almost up to date on the conditions in the various districts. The police reports were arranged for through the kind indulgence of the Commissioner, Lieut.-Colonel

M. B. Robinson. They consist of a monthly return rendered by each of the 300 or more Cape Mounted Police patrol stations located in the area subject to visitation. A return shows the number of farms in the area and the number and situation of those on which locusts in any of the several stages were observed, or were reported, in response to enquiry, during the previous month; and calls for a brief statement on the conditions as compared with the previous month or the previous season, and on the passage of unusually large swarms over the area. As the information given may be a month old when a return is made, and as nearly another month may elapse before all returns are received, it follows that the returns may not be of much use for forecasting purposes and for placing supplies, which purposes the immediate card reports may fulfil, but they furnish a reliable record to show the extent and intensity of the visitation month by month, from which in time valuable deductions may be made on the problematical matters alluded to above.

I repeat that in order to get full light on locust questions it is necessary to obtain information for a series of years from all the countries in the sub-continent that are visited by the pest. Early in 1906 Mr. C. B. Simpson, Transvaal Government Entomologist (recently deceased), suggested the establishment of a central office for the collection and study of data from all such parts, British and foreign. He pointed out that the officer in charge could furnish reports at frequent intervals, and immediate emergency ones when circumstances warranted it, to all the Governments concerned, thus enabling them to prepare for oncoming swarms, of the existence of which they might otherwise be ignorant; and in the course of time data would be on hand from which comprehensive deductions on the broad questions alluded to might be drawn. Lord Selborne, the High Commissioner, warmly approved of the plan, and arranged for the consideration of this and other locust matters by representatives of the Transvaal, Cape Colony, Orange River Colony, Natal and Basutoland. At a conference held in Pretoria in August, 1906, resolutions were adopted as the result of which the "Inter-Colonial Locust Bureau" was formed, and is supported by contributions from the several British Colonies, the work being under the supervision of a Board composed of one representative from each

Colony. This centralisation scheme has not necessitated any change in the system of collecting data in operation in the Cape Colony, but in addition arrangements have been made for telegraphic advice to be sent direct to Pretoria concerning the passage of very large swarms moving eastwards over Bechuanaland and Griqualand West.

It is suggested in a preceding paragraph that the sudden appearance of immense swarms in desert parts may perhaps be accounted for "by the occurrence of an exceptionally favourable season when there is an abundance of eggs in the ground." The assumption that an abundance of eggs may sometimes be in the ground in seasons when the parent insects have not been correspondingly numerous is based upon the fact that eggs of the Brown Locust may retain their vitality for years, and that they will hatch only when they are exposed to suitable temperature conditions, accompanied by abundant moisture. At irregular intervals, some travellers say about once in ten years, the dry parts alluded to receive very widespread, soaking, summer rains. Between these exceptional seasons most of the rainfall is said to be in more or less local showers. I must acknowledge that I have been able to get little positive information either for or against the idea, but I think it probable that much ground, which in the exceptional years is clothed in grass, in the years between escapes rain sufficient to hatch locust eggs, which it contains for a succession of seasons, though in almost, if not every, year throughout the area there are parts which, through being amongst those so fortunate as to catch good showers, have the pest. Under such conditions one can imagine that when a long drought is broken the soil in patches over tens of thousands of miles of territory is stocked with eggs, some laid only a few months before, others one, two or three years, and some perhaps far longer. In support of the suggestion may be mentioned the facts that the evaporation of moisture from the surface is extremely great in the parts of South Africa referred to, that the showers are generally violent and of short duration, causing much of the water to flow over the surface to lower levels instead of soaking in where it falls, and that rains in cold weather are not likely to affect the eggs. That eggs may hatch after being in the ground for a number of years is a common belief in

parts of the Colony, and although most of the statements which one is told in support of the belief are doubtless unreliable, a few appear to be thoroughly trustworthy. Nevertheless, the writer would be somewhat sceptical were it not that he has secured experimental verification. Eggs in large quantity which were secured in August, 1904, have retained their vitality. The bulk has been kept dry in tins and jars, and at intervals of a few months successive small lots have been transferred to dishes, wetted, and placed in an incubator heated to about 90° F. In every instance hatching has commenced in about ten days. Large numbers are hatching now, and it is worth noting that they are from a lot of eggs that are stored without surplus soil in a deep jar. At first the jar was closely covered, and after some months it was noticed that moulds were growing, and that a rank odour pervaded the contents; in consequence the jar has since been left open to the air. During the summer experimental lots when wetted have hatched without artificial heat, but one lot wetted during winter and kept at the room temperature did not develop. One incubated lot, which after an abundant hatching was allowed to become quite dry, was again wetted, and kept warm, with the result of bringing out a few young which had not developed on the first occasion. This was in agreement with the common observation of many intelligent farmers that several hatchings from one laying of eggs may take place, each following after a rain; in such cases it is assumed that the soil fails to receive and retain sufficient moisture from the first rains to penetrate the whole egg-pod. Under normal conditions in the districts from which they were received, the eggs used in the above-mentioned experiments would have hatched in September or October, 1904. This explanation for the sudden development of the pest in a magnitude which gives rise to the migration of mighty swarms, would be greatly strengthened if it were shown that invasions from the north-west into the Orange River Colony and the Cape districts to the southward coincided with the break-up of extensive droughts in the far north-west. Unfortunately, little meteorological information in regard to the area concerned is available. But Moffat in his "Missionary Labours" states after being absent twenty years the pest appeared at Kuruman in the good season of 1826, after several years of severe drought in

those parts, the great invasion of the Colony in 1863 and 1864 followed dry years, terminating in the terrible drought of 1862, and the last invasion came with the splendid seasons 1889 to 1891, when, after a succession of poor years, the far north-western districts shared in the wide-spread, soaking summer rains. Good years in the arid parts, however, do not necessarily harbingers an abundance of locusts, for through the agency of natural enemies or other causes in previous seasons the pest may at the time chance to be relatively scarce.

Measures for the destruction of locusts are of much greater interest to the average reader than the factors which account for the presence of the pest, and it gives a feeling of satisfaction to be able to state without fear of contradiction that methods of locust destruction have been evolved in South Africa, and are now in widespread use here that are far in advance of those used elsewhere in the world. The one paramount remedy lies in the employment of a richly-sweetened solution of arsenite of soda for poisoning the pest in its wingless stage. Farmers naturally have been a little slow to adopt this remedy on hearing of its success owing to the fear of poisoning stock, but ninety-nine per cent. of them have only *to try* it to become thoroughly converted to its use. Hundreds of farmers in the Cape Colony who, three months ago, were strongly opposed to using it are now amongst its most enthusiastic supporters, and its future employment in all the South African Colonies as the chief measure for destroying locusts is now assured. Some small losses of stock, especially of cattle, have occurred through its use, but with very few exceptions these are acknowledged by the parties concerned to have been due to negligence or ignorance, and as not likely to be repeated now that they understand what precautions are necessary. In most cases farmers who have had the misfortune to incur a loss have nevertheless gone on using the poison. The Government this year appropriated £5,000 for locust destruction, and nearly all of this was wisely spent in introducing the arsenic remedy to the notice of the farmers. About thirty officers have been at work travelling from farm to farm in the various infested districts instructing farmers and, wherever possible, spraying swarms for demonstration purposes. The materials for spraying have been supplied gratis to applicants and pumps have been loaned

for the application of the spray. About 1,200 pumps are now on loan, and about fifteen tons of arsenite and nearly fifty tons of sugar or treacle have been given away and practically all used. It is impossible to estimate the saving in crops and grazing that has been effected, but those in the best position to judge are certain that the benefit has been enormous in proportion to the expense. Some townspeople may be inclined to criticise the free use of supplies, but in point of fact the farmer who kills the young locusts that hatch or come on to his farm benefits the general public quite as much as himself, as such locusts if unmolested would probably live to do damage on other farms, perhaps far distant; hence the general public through the Government should be glad to bear the expense of the materials if only the farmer will apply them.

The most approved formula for preparing the poison for general use is:

Arsenite of Soda	1 lb.
Sugar or Treacle	3 lb.
Water	12 to 16 gallons.

A cheap grade of rich-smelling brown sugar is much better for the purpose than refined white sugar, and treacle is still more attractive to the insects. For use against locusts under a fortnight old and for spraying on thickly-growing grass the larger quantity of water is recommended. The solution should be *very lightly* applied in a fine spray over the vegetation surrounding a sleeping swarm or in a strip a few yards wide immediately in advance of the moving swarm. The locusts will greedily attack the vegetation, being attracted by the sweetening, and in a few hours will commence to sicken. It is unnecessary to *drench* the vegetation or the locusts, and to do so may involve risk to animals and birds. A few cases of poisoning appear to have been due to the animals concerned having eaten heavily of drenched locusts, whilst the general experience is that no apparent harm results to animals from feeding on locusts which have died merely from eating poisoned vegetation. Similarly an animal can eat with impunity a large quantity of properly-sprayed grass or bushes, whilst for it to eat the same weight of thoroughly drenched vegetation might result in its speedy death. It is obvious that a careful, experienced man incurs far less risk in using the poison than

an inexperienced man, especially one inclined to disregard precautions. Sprayed vegetation withers in a few days and thus becomes unattractive to stock, but until a heavy rain has fallen it is wise to keep animals away from sprayed places. Most accidents arise from carelessness in handling the poison, such as spilling the arsenite on the ground or leaving a receptacle about that has contained it, and leaving the prepared solution exposed in some vessel where animals can find it, or throwing it in quantity on one spot. Naturally, there is danger, too, in using much of it about any small depression in which water collects and into which it may be washed by rain. The solution has a caustic action on the skin, and may cause sores. Natives who spray with unclothed limbs should therefore be made to rub exposed parts with grease before beginning to spray; this will suffice to protect them. Food or drink should not be taken until the hands have been washed, and every other care taken that is customary in handling virulent poisons.

The quantity of sweetening which it is most desirable to use in preparing the spraying solution varies with circumstances. For spraying succulent grass, which the locusts already relish, pound for pound with the arsenite is sufficient, whilst for spraying scattered, drought-stricken bushes, which have little attraction for them, as high as six pounds to one of arsenite may be advisable.

The spreading of poisoned cut vegetation is often superior to spraying when the swarms to be treated are far from water or the veld is very dry and poor, and sometimes under other circumstances. Finely-cut green forage is generally used, and a bundle or two suffices for feeding a fairly large swarm. It is soaked or thoroughly wetted in the normal solution, and then very thinly scattered amongst and in advance of the insects, as little excess as possible over what they will eat being given. Uncut forage answers as well for killing the locusts, but any left afterwards should be carefully gathered and destroyed to prevent animals from eating it. It is said that stock will not trouble to pick up scattered bits of the finely-cut article. One man on horseback with a bag of poisoned forage can deal easily with locusts at a distance from water that would render spraying in the ordinary way a matter of difficulty. A simple way to carry the forage is to tie it in a bag, balance this across the horse, and then to slit

it on top so that it will hang as two open bags—one on each side. If the forage is very wet and the distance great, the horse should be protected from skin injury by a thick bag or waterproof sheet. The man spreading the stuff should protect his hands by greasing or oiling them if he does not wear gloves.

Before the advent of the arsenite remedies, soap spraying was the leading measure amongst many farmers, about one pound of any good bar soap being used to a paraffin tin of water. Death is caused by clogging the breathing pores, and to be effective the spraying must be very heavy. The younger the locusts the better the results obtained, and early morning spraying is better than that done in the evening; but despite apparently thorough treatment even a swarm of young locusts may have to be sprayed two or three-times or more to effect its complete destruction. Except when the swarm is clustered, as at night, soap spraying is very costly in materials, and even under favourable circumstances ten gallons of soap solution will rarely do as good work as a single gallon of the arsenite poison. Also, the soap solution costs more per gallon and gives greater trouble in the preparation. Soap solution, however, considering all circumstances, is believed to be more economical than paraffin oil or any of the numerous dips and other proprietary substances recommended as remedies other than those that depend on arsenic for their value.

The use of screens for diverting swarms from cultivated lands, or into pits or other receptacles where they may be destroyed, has long been practised in many countries. Recently enterprising South African merchants have placed narrow barriers of tin on sale for the purpose. These are made and sent out in large rolls, and provision is made for supporting them in an upright position by metal pegs. Farmers who want to dry locusts for feeding purposes and who can get swarms on level land find such tin screens highly useful. They must not be tarred or painted or allowed to rust, as a perfectly smooth surface is necessary to prevent the insects getting a foothold. Cheaper screens are made of smooth table oil-cloth. A simpler method of catching small swarms involves driving them on to sheets of cloth, such as wagon-sails, at night. A sail is spread out close to the sleeping

swarm, a bright light placed on it, and then the insects suddenly roused. In their confusion they jump to the light, and may then be easily gathered into bags.

Fire is commonly utilised for the destruction of swarms of hoppers, and may be by far the best and cheapest of all measures to use when the insects are in, or can be driven into, dried grass that may be safely set alight. Another old-fashioned measure which is still often used to advantage is that of trampling swarms to death by means of sheep driven back and forward over them; whilst sometimes in thickly-settled native districts as good a measure as any is for the natives to beat the massed insects with bushes. To frighten the insects off by noises, the waving of flags, and by smoke should only be practised in the case of winged swarms. Owing to the cheapness and simplicity of the arsenical remedies, there is now little excuse to allow hoppers to escape, although it is, of course, justifiable for any one to do what he can to prevent the invasion of his garden by them. For this purpose some townspeople, and farmers too, very successfully make use of strips of tin, zinc or sheet or corrugated iron, secured along or near the top of the boundary wall and projecting a few inches outwards horizontally or sloping downwards like the eaves of a house.

In conclusion, it remains to be said that the locust plague is now being fought systematically in all the British Possessions in South Africa, and that better and better work may be expected with each succeeding year. Natal and the Orange River Colony have legislation requiring land occupiers to destroy all hoppers that appear on their holdings, and in a few years it is possible that the Cape Colony and the Transvaal will have similar legislation. Although the majority of the farmers may be depended upon to do voluntarily the most that can justly be asked them, some, including many who now only fail to act because they are not sure that their neighbours will do their part, require the stimulus of obligation.

With the general adoption of the measures now at command, material losses of crops and grazing through the ravages of "voetgangers," that is immature locusts, would no longer occur; and the losses inflicted by flying locusts would be little in comparison to what they would be were the swarms permitted to mature. It is not too much to hope that this happy condition will soon be

realised. The country would still remain subject to occasional invasions by winged swarms, bred in the Kalahari Desert and in the surrounding arid and unsettled territory, but even trouble from this source would probably be vastly less than it has been in the past for, as argued in preceding pages, the supply of locusts from the desert may in large part be due to swarms permitted to breed in settled parts.

Planting Calendar for Farm and Garden.

OCTOBER.

Preparation of the land for seeding will take up the labour on the farm for this month.

Land that is broken up for the first time should receive as much cultivation as will secure an even tilth and making it free of clods, giving a rough and broken surface. Twice ploughing, followed with plenty of harrowing, will in most cases be necessary before the necessary closeness is obtained.

New land when cultivated only in a rough way is easily affected with short spells of drought, but when well tilled so that the surface is well closed up, it is much more drought resistant.

On vleis soils that are still damp mealies may be sown this month before the rains set in.

This or even earlier sowing allows the plant to get a good start and to become large sized and strong to withstand the injurious effect of much heavy rain on this kind of soil.

Early varieties of potatoes may be planted this month.

A friable sandy loam is best for potatoes. Soil that gets baked and hard on drying after rain, or that gets water-logged during the rains, should not be taken for potatoes.

The land should be prepared by ploughing and harrowing until a fine mould is obtained. The piece of ground selected for potatoes should have been ploughed and harrowed and left in a loose state over the winter months, and have the kraal manure spread over the surface for some time.

The manure can be applied in drills and the setts planted therein, but injury may sometimes arise from worms and other insects in kraal manure, so that it is safer to spread the manure broadcast over the surface and plough it in.

Potatoes should be planted 32 in. to 34 in. between the rows, and 15 in. between the setts.

They may be planted behind the plough in every third furrow—in the side of, but not the bottom—at about 5 in. from the surface.

If the tubers are large they may be cut into two or more setts, a sprinkling of ashes helps in drying up the cut surfaces. The sprouts should never be broken more than can be helped.

After planting the land should be harrowed until the surface is level.

Nearly all vegetables can be grown at this season. Different sorts require more space and deeper covering of soil than others.

Full sowings may be made of Dwarf Beans, Radish, Lettuce, Carrot, Beet, Onion, Tomato, Marrow, Pumpkin, Squash Leek, Mustard and Cress, Parsley, Egg Plant, Capsicum, etc.

Celery should be sown this month. Some care is necessary in raising the seed. It should be sown in a light soil having plenty of sand on the surface so that it will not bind on watering.

The sheltered side of a wall or building should be chosen, and it is better to be sown in boxes. Water morning and evening all seed beds and boxes.

NOVEMBER.

Planting the main crop of mealies may be proceeded with during the whole of this month. It is, however, not judicious to plant too much until the rains have penetrated the soil to a considerable depth. Light rains damping the surface for a few inches only may germinate the seeds, and a subsequent drought for a week or so may dry out the young plants.

The driest lands should be planted first, and the earlier maturing varieties of mealies should be planted on all sandy and light red soils.

Mealie planters are now generally used. The seed is planted in rows 3 ft. 2 in. to 3 ft. 4 in. wide and 15 in. to 18 in. apart in the rows. About 15 lbs. seed is required per acre. If the seed is very large, more will be required, and less if the seed is small sized.

If a mealie planter is not available, the seeds may be dropped behind the plough. As the bottom of the furrow would be too deep, the seeds should be placed in the face of the last upturned furrow at a depth of about 4 inches from the surface. By depositing the seed in every third furrow the rows will be obtained at nearly the proper distance.

On all soft red soils and also light sandy soils, rolling would be of the greatest benefit in consolidating the land and making a firm seed bed.

Pumpkins and Kafir melons should be sown this month. The seeds are dibbled in, usually two or three in each hole. The rows are 8 ft. wide and 8 ft. between the plants.

A system is frequently practised whereby the seeds are planted among the mealies either by mixing a few pumpkin seed among the mealie seed, or planting one row of pumpkins at certain intervals apart.

While this plan may have some advantages, especially in shading the crop, yet the pumpkins draw largely on the soil moisture to the detriment of the mealie crop; and also they are a great hindrance to the cultivation of the mealies—a matter of great importance in a dry season.

Pumpkins grow very well by themselves, especially on a piece of well-manured soil.

Onions that have been raised from seed sown in May, and afterwards pulled and kept over the dry season, should be planted out as soon as the ground has been well soaked with rain.

A vegetable loam or a rich sandy loam should be taken for onions. The land should be specially well prepared, and ~~only that which~~ has been some time under cultivation is suitable.

A good heavy dressing of kraal manure should be applied over the surface and allowed to lie until the early rains come, when all the weeds will spring. Thereafter the land should be ploughed and harrowed, when it may lie a week or two, when another crop of weeds will come up on most land.

The next ploughing should be done immediately before planting, and the land well harrowed and rolled in order to make a firm bed for the onions.

The planting is done in rows which are marked off 18 inches apart, and a small trench dug out about three inches deep. The onions are laid along and packed in by hand at a distance apart of about five inches.

Orchard and forest trees should be planted this month, taking advantage of the periods succeeding heavy rains when the ground has been soaked to some depth.

The land should be ploughed twice and well harrowed, when spade holes of depth adapted for setting in the young tree are sufficient.

As soon as the first rains come, all crops should be sown that are intended for ploughing in as green manure. Thus land that is intended to be put under crop in January will have the green crop, weeds etc., all grown up and ploughed in in time for this being accomplished.

Kafir corn or Kafir mealies, sown broadcast fairly thick, make very good material for ploughing in as green manure, since they grow a large bulk which goes to increase the humus in the soil.

Cow peas, velvet beans, white lupins, and beans of all kinds may be used for green manuring. Although not so bulky, they are all nitrogenous, and if the nitrogen assimilating bacteria are present, forming nodules on the roots, there will follow a gain of nitrogen to the soil.

Sow Spinach, Parsnip, Turnip, and other vegetables not already sown. Transplant all members of the Brassica family when large enough. A suitable period should be chosen when the weather is dull. A mulch of half decayed stable manure round the young plants will assist the growth in dry weather by conserving the moisture about the roots and less watering will be required.

A little lime worked into the soil around the roots will assist greatly in keeping away grub.

Keep the land well worked between the rows, keeping down weeds, and also maintaining a loose surface, preventing the soil hardening after rain.

Cheddar Cheese Making.

By R. SILVA JONES, Government Dairy Expert.

(*Continued.*)

PROCESS OF MANUFACTURE.

Rennetting.—The milk upon its arrival into the cheese dairy is tipped at once through the strainer into the cheese vat, and in the case of milk being bought from neighbouring farmers, is weighed and the owner is credited with the exact weight of milk supplied. Each lot should be examined carefully to see that it is in good condition before being tipped into the vat through the strainer. Great care should be exercised to ascertain the exact condition of the milk, as ripe, gassy, or bad-flavoured milk will have to be treated accordingly, as the process of cheesemaking is purely one of fermentation, and therefore the most important point to the maker is knowing exactly what condition his milk is in that he may have full control of the lactic acid. The treatment of over ripe milk will be explained later.

In the case of evening's milk it is always better to roughly skim off the cream that has risen during the night, and heat it up to about 90° Fahr., stir well and add again to the milk.

Colouring.—Cheddar cheese requires a certain amount of colouring added in order to make the cheese of a more appetising and richer appearance. The colouring should be added prior to rennetting, and can conveniently be added during the time that the temperature is being got up to requisite rennetting temperature.

The amount of colouring to be used will vary according to the market requirements, but I have found that the amount as shown on the table given will be ample, but of course makers must use their own discretion. The colouring should be diluted with about twice its volume of water and well stirred in.

TABLE FOR COLOURING.

Gals.	Drs.	Mims.	Gals.	Drs.	Mims.	Gals.	Drs.	Mims.	Gals.	Drs.	Mims.
1	...	3	50	2	40	100	5	23	150	8	...
3	...	9	52	2	46	102	5	29	152	8	7
5	...	15	54	2	52	104	5	36	154	8	13
7	...	22	56	2	59	106	5	42	156	8	20
9	...	28	58	3	6	108	5	46	158	8	26
11	...	33	60	3	12	110	5	49	160	8	33
13	...	40	62	3	19	112	5	55	162	8	39
15	...	48	64	3	25	114	6	2	164	8	45
17	...	54	66	3	31	116	6	9	166	8	52
19	1	...	68	3	38	118	6	15	168	8	59
21	1	3	70	3	44	120	6	23	170	9	6
23	1	9	72	3	51	122	6	29	172	9	12
25	1	20	75	4	...	124	6	33	174	9	19
27	1	25	76	4	3	126	6	38	176	9	25
29	1	33	78	4	9	128	6	45	178	9	31
31	1	39	80	4	16	130	6	52	180	9	38
33	1	45	82	4	23	132	7	6	182	9	44
35	1	52	84	4	29	134	7	12	184	9	50
37	1	58	86	4	36	136	7	19	186	9	56
39	2	3	88	4	42	138	7	25	188	10	3
41	2	9	90	4	49	140	7	33	190	10	9
43	2	15	92	4	55	142	7	38	192	10	16
45	2	22	94	5	2	144	7	44	194	10	23
47	2	28	96	5	9	146	7	50	196	10	29
50	2	40	98	5	16	148	7	55	200	10	40

As soon as all the milk is in, apply hot water through the jacket, or in the case of steam connection turn on steam slowly and heat up to the renneting temperature, stirring gently all the time to prevent cream from rising, and allow of equal heating. The temperature to which it is best to add the rennet is more or less, in the case of good milk, controlled by the surrounding temperature of the air; from 84° to 86° Fahr. being best, in summer at the lower temperature and according to temperature of the air so increase up to 86° Fahr. Immediately this has been done, it is necessary to find out the degree of acidity in the milk, and this is done by what is often called the "Acid or straw test," apparently receiving the second name because a piece of straw is used in order to facilitate the determination of exactly knowing when the milk commences to coagulate. This test is carried out as follows: Take 4 oz. of milk from the vat at the temperature at which the rennet is to be added, measured by an ordinary 4-oz. chemists' phial, then throw the milk into an enamel cup; then add 1 drachm of rennet and note exactly how

long the milk takes to thicken. The easiest plan to determine this is when adding the rennet, stir vigorously for five seconds, giving the milk a revolving motion in the cup, then add a small piece of straw or match, which will be carried round with the motion of the milk, and as soon as the match or straw stops revolving, the milk will have coagulated. This should take from 21-23 seconds, but one must be guided by the season of the year, the condition of the milk, and the maker in practice will soon find out as to when to allow for a second or so above or below. However, as soon as the desired test has been reached, no delay should occur in adding the rennet and proceeding with the process. The amount of rennet required to thicken the milk to give a curd of the requisite firmness is about 4 oz. to the 100 gallons; by the table for renneting it will easily be seen the proper quantities to add from 1 gallon up to 200.

TABLE FOR RENNETTING.

Gals.	Ozs.	Drs.	Mims.	Gals.	Ozs.	Drs.	Mims.	Gals.	Ozs.	Drs.	Mims.	Gals.	Ozs.	Drs.	Mims.
1	...	...	19	50	2	...	...	100	4	...	...	150	6	...	...
3	...	...	57	52	2	...	38	102	4	...	38	152	6	...	38
5	...	1	36	54	2	1	16	104	4	1	16	154	6	1	16
7	...	2	14	56	2	1	55	106	4	1	55	156	6	1	55
9	...	2	52	58	2	2	33	108	4	2	33	158	6	2	33
11	...	3	31	60	2	3	12	110	4	3	12	160	6	3	12
13	...	4	9	62	2	3	50	112	4	3	50	162	6	3	50
15	...	4	48	64	2	4	19	114	4	4	19	164	6	4	19
17	...	5	26	66	2	4	57	116	4	4	57	166	6	4	57
19	...	6	4	68	2	5	36	118	4	5	36	168	6	5	36
21	...	6	42	70	2	6	14	120	4	6	14	170	6	6	14
23	...	7	21	72	2	6	52	122	4	6	52	172	6	6	52
25	1	...	...	75	3	...	...	125	5	...	...	175	7	...	...
27	1	...	38	76	3	...	19	126	5	...	19	178	7	...	57
29	1	1	16	78	3	...	57	128	5	...	57	180	7	1	36
31	1	1	55	80	3	1	36	130	5	1	36	182	7	2	14
33	1	2	33	82	3	2	14	132	5	2	14	184	7	2	52
35	1	3	12	84	3	2	52	134	5	2	52	186	7	3	31
37	1	3	50	86	3	3	31	136	5	3	31	188	7	4	9
39	1	4	19	88	3	4	9	138	5	4	9	190	7	4	48
41	1	4	57	90	3	4	48	140	5	4	48	192	7	5	26
43	1	5	36	92	3	5	26	142	5	5	26	194	7	6	4
45	1	6	14	94	3	6	4	144	5	6	4	196	7	6	43
47	1	6	52	96	3	6	43	146	5	6	43	198	7	7	21
50	2	...	...	98	3	7	21	148	5	7	21	200	8	...	...

The rennet should be well diluted with cold water, in order that the cold temperature may retard the action of the rennet until it is thoroughly mixed with the milk, the

diluted rennet is then added, and the whole well stirred for about five minutes, to thoroughly mix and also to prevent the cream from rising. Care must be taken not to stir too long, as the quantity of rennet added ought to start coagulation in about twelve to fourteen minutes, and if stirring is going on, or any heavy movement of milk in the vat at the time coagulation commences, a very great loss of fat will ensue together with a loss of curd.

Starters.—The use of a starter is to be most highly recommended. A starter is in reality an inoculation of the milk with a lactic ferment that has been prepared from properly sterilised milk, and at the same time been prepared in a pure, sweet atmosphere, free from taint or contamination in every way. By the use of a starter the maker is assured of having a preponderance of lactic acid germs over others, which will assure him of success and give a cheese of more full flavour and better in every way. The old-fashioned idea of using old whey from the day before is not only dangerous but should not be followed at all, the present system of Culture Starter having completely superseded it. The great drawback to whey is that it is bound to be full of all sorts of adverse germs, and it cannot be a clean inoculation so to speak, and what is very dangerous is the possibility of whey from one day's bad or indifferent cheese, inoculating the fresh milk with deleterious germs.

The culture required to produce this starter can be procured in the form of a dry lactic ferment, it is in the form of a powder purchased generally in bottles, the process is to take about a gallon of fresh sweet milk and sterilise it by heating to about 180° Fahr. and keeping it thereabouts for at least fifteen minutes, and cool to about 75° Fahr. then add according to directions sufficient to produce coagulation in about 24 hours. When coagulated, add about 10 per cent. of this to a similar amount of sterilised milk and set aside for coagulation, repeat the process again, when the starter should be ready for use.

From 2 per cent. to 5 per cent. should be sufficient to add to the milk in the vat for cheesemaking, according to conditions.

Keep the temperature of the starter as near 75 degs. as possible.

In order to keep the starter going from day to day, it will be necessary for the cheesemaker to propagate the

starter every day from the one day's starter for the next day's requirements.

A good starter should have a smooth, glossy, velvety appearance, and have a mild lactic acid flavour, clean and sharp to taste, in fact to many it makes quite a pleasant drink.

The starter should not be allowed to get too old, if it is noticed that it is what is termed "going off" make a completely new starter. Be careful not to have the starter over ripe, or the vitality will be destroyed, and do not use too much. And above all things never add a cold starter to warm milk; always heat up to the temperature of milk in the vat, and without fail always strain starter through a fine cloth into the milk.

The best kind of vessel to propagate a starter in is a stone jar, well glazed inside, without chips.

Cutting the Curd.—When the curd is ready to cut, that is when the coagulation has finished and the curd is about to sink and the whey commences to ooze slightly through at the top, it should break away perfectly cleanly from the thermometer when put in diagonally and lifted out. It shows a clear break, and not in the form of a jagged break. Another very good way is by applying the bent finger to the curd; if the curd sticks it is not ready, if clean, then it is ready to cut. The curd is now ready for cutting with the two knives as shown in illustration.

I prefer to use the vertical knife first, cutting lengthwise and then across, and afterwards with the horizontal knife. The object of this cutting is to facilitate the expulsion of whey, and by cutting the curd into small pieces, heat can be applied evenly, when by the action of the rennet and of the heat the curd contracts and expels the whey. As soon as this process is complete, wash off the hands and arms, and with the hands thoroughly clean off any curd adhering to the sides or bottom of the vat, particularly the corners. But work very slowly and quietly, the curd is very soft still, and easily breaks up, which means loss. If your curd is a "fast worker" or has a considerable amount of acidity developed, cut it smaller, as it is more easily cooked, and the whey will be more easily expelled.

Slow stirring with the hands should continue for ten to fifteen minutes before heat is applied.

The process of cooking the curd, that is of heating it up to about 98° to 100° Fahr., according to the season of

the year, is one of the most important in the whole process, and I think that a great deal of the nuttiness and mellowness depends upon the proper cooking of the curd, and the worker must by practice and experience find out a lot that it is well nigh impossible to write on paper. After the curd has been gently stirred in the whey for about fifteen minutes, heat can be applied, either by putting hot water into the jacket or by steam, in accordance with one's arrangements. The curd rake is best used after the mass has reached the temperature of 90° Fahr., the curd is then sufficiently strong to replace the hand stirring, but care must be taken to see that the corners are kept well free from curd, or it will become scorched against the hot inside of the vat. The curd must not be heated too quickly, say about one degree for every five minutes. The time taken from the completion of cutting to the finish of the cooking process should occupy about 45 to 50 minutes.

In the case of a fast-working curd a different method altogether should be employed, as your object is to as soon as possible get the curd out of the whey, and to do this add a little more rennet, cut the curd smaller, and as soon as possible start either slowly dipping the whey out or by a syphon, and allow it to run slowly away during the process of cooking, until you have it down to the level of the curd. Heat 2° higher and hand stir all the time. If the curd is still very acid, as soon as cooking is complete, run off all the whey and add water of a similar temperature and thoroughly wash the curd, and then let run off. This frees the curd of a lot of whey and necessarily retards the acidity. In the case of a gassy curd, or one that contains a lot of pin holes, and is quite spongy, give the same treatment, only the cheddaring process must be continued until all the gas has escaped and the spongy mess broken down. The cooking temperature must be varied according to the season of the year and the richness of the milk. In spring, with a low percentage of fat, a lower temperature is necessary, and *vice versa* with a richer milk a higher temperature is necessary, as rich milk tends to retain moisture. This combined with the fact that lesser moisture is necessary on account of the softening influence of the extra fat on the body of the cheese, makes it imperative to expel more moisture, and consequently a higher temperature is necessary, and

it can go up to 104° Fahr., at seasons when the milk is very rich.

In the ordinary way the curd is now left to sink in the vat to mat together and for the acidity to increase, the lid being put on to prevent any drop in temperature. Tests must occasionally be made to ascertain the amount of acidity developed. This is done by heating an ordinary piece of iron to slack heat—clean it well off, and from the vat take a small handful of curd; press the whey well out of it, and then press the curd against the hot iron and slowly draw it away, when it will be seen that the curd adheres to the iron in the form of very tiny threads, and it is in accordance with the length of these threads that the acidity is judged. The proper length at this stage should be about $\frac{1}{4}$ of an inch, but even this varies according to condition; with a rich milk allow the threads to be longer. If the curd will not correspond to this allow to remain for ten minutes and test again, but in case it shows a greater length run off the whey with all possible speed. By fixing in the strainer supplied with the vat for this purpose the whey can be run off, and the curd left in the vat. The curd is now lifted from the vat on to the cooler, a cheese-cloth having been previously laid over the bars, so that, being kept well covered all the time, and in about ten minutes is cut into strips and 6 in. square, turned over, this turning being repeated every ten or fifteen minutes. Do not pile the blocks of curd one on top of the other, but to facilitate draining I prefer to put the end of one piece on to the end of another each time. It is essential all through this process that the temperature be kept up to 90° Fahr. and above. If it is allowed to go below this it is liable to become of a soapy consistency; tests can now be made with the hot iron again to ascertain the degree of acidity, and if the threads on the hot iron extend from $\frac{3}{4}$ to an inch in length, it is ready for milling. This naturally varies as previously explained.

The mill that I prefer to use is the Australian pattern that cuts the curd into fingers with a clean cut; the old pattern tore and bruised the curd too much, which resulted in a loss of butter fat. An illustration of the former is shown, and I strongly recommend it in preference to the old pattern. The curd, when passed through the mill, should be well aired and allowed to mature. When the curd has obtained a nice silky texture, and smells

very much like fresh butter, it is ready for salting. The temperature must not be allowed to fall too much, but by the time it is ready for the salt it should be about 84° Fahr. Salt should be added at the rate of about 3 lbs. to the 100 lbs. curd, or what is sufficiently close to say, to every 100 gallons milk. A table for salting is appended:—

TABLE FOR SALTING.

Gals.	Lbs.	Ozs.	Gals.	Lbs.	Ozs.	Gals.	Lbs.	Ozs.	Gals.	Lbs.	Ozs.
1	...	$\frac{1}{2}$	50	1	8	100	3	...	150	4	8
3	...	$1\frac{1}{2}$	52	1	9	102	3	1	152	4	9
5	...	$3\frac{1}{2}$	54	1	10	104	3	2	154	4	10
7	...	$4\frac{1}{2}$	56	1	11	106	3	3	156	4	11
9	...	$5\frac{1}{2}$	58	1	12	108	3	4	158	4	12
11	...	$6\frac{1}{2}$	60	1	13	110	3	5	160	4	13
13	...	$7\frac{1}{2}$	62	1	14	112	3	6	162	4	14
15	...	$8\frac{1}{2}$	64	1	15	114	3	7	164	4	15
17	...	$9\frac{1}{2}$	66	2	...	116	3	8	166	5	...
19	...	10	68	2	1	118	3	9	168	5	1
21	...	11	70	2	2	120	3	10	170	5	2
23	...	12	72	2	3	122	3	11	172	5	4
25	...	13	74	2	4	124	3	12	174	5	5
27	...	14	76	2	$4\frac{1}{2}$	126	3	13	176	5	6
29	...	15	78	2	5	128	3	14	178	5	7
31	1	...	80	2	6	130	3	15	180	5	8
33	1	1	82	2	7	132	4	...	182	5	9
35	1	$1\frac{1}{2}$	84	2	8	134	4	1	184	5	10
37	1	2	86	2	9	136	4	2	186	5	11
39	1	$2\frac{1}{2}$	88	2	10	138	4	3	188	5	12
41	1	$3\frac{1}{2}$	90	2	11	140	4	4	190	5	13
43	1	$4\frac{1}{2}$	92	2	12	142	4	5	192	5	14
45	1	$5\frac{1}{2}$	94	2	13	144	4	6	194	5	15
47	1	$6\frac{1}{2}$	96	2	14	146	4	7	196	6	...
50	1	8	98	2	15	148	4	$7\frac{1}{2}$	198	6	...
									200	6	...

If the salt is added at too high a temperature it is likely to cause butter socks in the cheese, which naturally destroy the appearance when cut, as will also too rough stirring in of the salt. Great care should be taken to see that the salt used is good and clean, and to see that it is not tainted, as salt, being a chemical compound, readily absorbs taints and odours from being kept in an unclean place. In the case of curd from over ripe milk more salt should be added, as also is the case with a wet curd, which sometimes happens.

The salt being weighed out in accordance with the scale, it should be added half at a time, and well, though quietly, stirred, to ensure it being equally mixed.

The curd must not be put to press until the salt has thoroughly dissolved. This can be easily ascertained by the curd having lost its grittiness. And the temperature should not be less than 80° Fahr., or the curd will not close together properly, and when cut will be found to be full of holes.

The mould should by this time have been got ready, that is with the cloth bandage put on, allowing about 1½ inches over at the top and bottom for the trim over, and the bottom cap previously put in. It is very necessary that all the cheese should be made as nearly one weight as possible, it greatly aids the sale of a good article, and therefore it is necessary to weigh the curd into each mould. Practice will show exactly how much green curd to put so that the mould will come nicely home and do away with the unsightly rim that is left if too much curd is put in.

The pressing should be commenced slowly and regularly. With the lever presses as shown in the illustration it will be seen that the pressure is continuous, but it should be kept well screwed up. Keep the long lever hanging at about right angles to the machine. If this be done, it is not possible to get any relaxation of weight, and in about one hour's time the weights can be applied. First the small one, later on substitute it for the big one, and later on again put both weights on, screw well up, and leave for the night. First thing next morning the cheese must be taken out of the mould, or so far out that one can see the two ends. First look to see that the bottom end cloth has nicely folded, leaving a good square edge. If it has, leave it; then pull up the cloth from the mould, put a top on the cheese, neatly turn the cloth down, cutting any off if it is too long, and return to press again. Then leave it there with full pressure on as long as possible, just giving oneself time to take the cheese out. Have the moulds washed ready for the next lot of curd. This will always give the cheese nearly twenty-four hours in the press, which is ample.

In order to prevent too much evaporation from the cheese in its early stage of ripeness, it is necessary to give it a temporary coat, and this is done in two ways, either one being very satisfactory. The first is to scald the cheese when the cheese is first taken out of the press to pull up the cloth. The cheese is dipped in water of a

temperature of 120° Fahr. and left there for about one minute, then taken out and replaced in the mould. The other is, after the cheese has finally come out of the press and allowed to dry off, to paint it with good sweet lard slightly warmed so that it can be put on with a brush. Either of these will prevent evaporation in the early stages and give the cheese a temporary coat.

The cheese is now ready for the curing room, and it is preferable to have two rooms, the first in which the cheese can stand for a fortnight or three weeks, and should be of a temperature of about 70° Fahr., and from here they are taken into the second room, which should be kept about 60° Fahr.

For the first month or six weeks the cheese requires to be turned once every day, and care must be taken that in turning the edges are not broken. They require to be lifted well off the shelves to be turned. After the first six weeks, turning every other day is sufficient, but daily will do no harm, and if time permits daily is preferable. If it is found, as is often the case, that the cheese begins to develop gas, and lifts slightly, as soon as it is noticed, the gas should be let out by pricking it with a skewer in the place where the lifted rind is noticed. If this is not done the blowing will cause the rind to separate from the cheese, and the look of the cheese will be damaged.

These rooms should be scrupulously clean and free from moulds, and in the damp weather, if it is seen that moulds appear, a good preventative is to spray a 10 per cent. solution of formaline about the room, but do not allow the solution to get on to the cheese if possible.

Before every season commences these rooms must be well cleaned out and whitewashed, and the shelves well scrubbed down. If the mould should bother very much, the burning of sulphur in the room will assist greatly.

The date of the making of every cheese should be plainly stamped thereon, in fact, I strongly advocate keeping a daily record of the work. This will be found of tremendous assistance, as in case of extra good or indifferent cheese, the cause can then more easily be ascertained, and recommend the following record to be kept daily.

are for the very latest and most up-to-date machinery, and include all that is necessary. The utensils are all of the very best make upon the market.

Estimate for 100 gallons per diem.

	£	s.	d.
1 Improved Oblong Cheese Vat, 100 gallons ..	16	10	0
1 Double Lever Cheese Press ..	9	5	0
1 Improved Curd Rack and Cooler, 60" x 28" ..	8	10	0
1 Improved Curd Mill and Cutter ..	10	10	0
1 Pair Steel Curd Knives ..	3	0	0
1 Curd Scoop ..	0	5	0
1 Strainer for hanging on Vat ..	1	1	0
1 Wood Curd Rake, £1 7s. 6d. ..	1	7	6
1 Portable Boiler, 75 gallons ..	10	0	0
	£60	8	6

Estimate for 200 gallons per diem.

	£	s.	d.
1 Improved Oblong Cheese Vat, 200 gallons ..	24	0	0
1 Single Lever Cheese Press ..	6	5	0
1 Double Lever Cheese Press ..	9	5	0
1 Improved Curd Rack and Cooler, 72" x 30" ..	10	10	0
1 Improved Curd Mill and Cutter ..	10	10	0
1 Pair Steel Curd Knives ..	3	5	0
1 Curd Scoop ..	0	5	0
1 Strainer for hanging on Vat ..	1	1	0
1 Wood Curd Rake, £1 7s. 6d. ..	1	7	6
1 Portable Boiler, 90 gallons ..	11	0	0
	£77	8	6

Estimate for 300 gallons per diem.

	£	s.	d.
1 Improved Oblong Cheese Vat, 300 gallons ..	30	0	0
2 Double Lever Cheese Presses ..	18	10	0
1 Improved Curd Rack and Cooler, 96" x 33" ..	12	10	0
1 Improved Curd Mill and Cutter ..	10	10	0
1 Pair Steel Curd Knives ..	3	10	0
1 Curd Scoop ..	0	5	0
1 Strainer for hanging on Vat ..	1	1	0
1 Wood Curd Rake, £1 7s. 6d. ..	1	7	6
1 Steam Generator ..	18	10	0
	£96	3	6

Estimate for 400 gallons per diem.

	£	s.	d.
1 Improved Oblong Cheese Vat, 400 gallons ..	37	10	0
1 Single Lever Cheese Press ..	6	5	0
2 Double Lever Cheese Presses ..	18	10	0
1 Improved Curd Rack and Cooler, 96" x 33" ..	12	10	0
1 Improved Curd Mill and Cutter ..	10	10	0
1 Pair Steel Curd Knives ..	3	15	0
1 Curd Scoop ..	0	5	0
1 Strainer for hanging on Vat ..	1	1	0
1 Wood Curd Rake, £1 7s. 6d. ..	1	7	6
1 Steam Generator ..	18	10	0
	£110	3	6

Estimate for 500 gallons per diem.

	£	s.	d.
1 Improved Oblong Cheese Vat, 500 gallons	42	10	0
3 Double Lever Cheese Presses	27	15	0
1 Improved Curd Rack and Cooler, 96" x 33" ..	12	10	0
1 Improved Curd Mill and Cutter	10	10	0
1 Pair Steel Curd Knives	4	0	0
1 Curd Scoop	0	5	0
1 Strainer for hanging on Vat	1	1	0
1 Wood Curd Rake, £1 7s. 6d.	1	7	6
1 Steam Generator	18	10	0
	£118	8	6

Australian Pattern Telescopic Cheese Moulds.

As may be required at the following prices :—

- To make cheeses 6 lbs. weight, 7" diameter, about 5" high, 15s. each.
- To make cheeses 10 lbs. weight, 7" diameter, about 8" high, 17s. 6d. each.
- To make cheeses 20 lbs. weight, 11" diameter, about 6½" high, 22s. 6d. each.
- To make cheeses 40 lbs. weight, 13½" diameter, about 6½" high, 27s. 6d. each.

Curd Rack and Cooler can be procured in any size as may be desired.

Price List of Sundries.

- Cheese Bandage, 7" Moulds, 6 lb. and 10 lb. size, 10d. per yard of 3 Tubes.
- Cheese Bandage, 11" Moulds, 20 lb. size, 8d. per yard of 2 Tubes.
- Cheese Bandage, 13½" Moulds, 40 lbs. size, 5d. per yard of 1 Tube.
- Tops, 7", 1s. per 100.
- Tops, 11", 2s. 6d. per 100.
- Tops, 13½", 3s. 9d. per 100.
- Cheese Straining Cloth, 9d. per yard.
- Graduated Measure Glasses, 2s. 6d. each.
- Cheese Tasters, 2s. 6d. each.
- Cheese Brushes, 2s. 6d. each.

Chr. Hansen's Dairy Preparations.

- Cheese Colouring, in ½ gallon bottles, 9s. per bottle.
- Rennet Extract, ½ gallon bottles, 9s. per bottle.

These prices are free on rail at East London, and can be slightly reduced in cost, but if they are reduced it is at the expense and economical efficiency of the plant. For instance, the imported curd mill at £10 10s. can be substituted by the old style of mill at £3, and the steam generator in the largest two sizes can be done away with. But the latter would have to be substituted by a boiler, which would save but little and greatly increase the labour. I strongly recommend that the substitutes that

I have mentioned be not used, as the original estimates are framed with a view to complete efficiency as well as the curtailment of expense.

With regard to the moulds, they have not been included in the original estimates because of the different sizes, and it is not likely that everyone will prefer to make the same size cheese. Moulds are made in four sizes, viz.: 6, 10, 20 and 40 lbs., but for our market I think the 20 lbs. cheese the most suitable. One would naturally make to the requirements of the market, though it must always be remembered that the larger the cheese the less waste there is on account of a smaller proportion of rind, and that the larger cheese ripens better than the smaller ones.

For the sake of estimating the number of moulds required, it can be taken that a 20 lb. mould would suffice for twenty gallons of milk and so on, and the number of these required must therefore be added to the cost of plant, but it is always better to have a couple of moulds too many in case of an accident, and no matter what size mould is determined on always get a few small ones, as the curd will not always evenly weigh out between the large moulds. What is over can be made into small cheeses.

This is practically the whole of the capital required for the plant, but there are still a few what may be termed working expenses, viz.: bandages and tops, the size of these will be the same as that of the moulds. Sufficient for the first season should be purchased with the plant. A few yards of cheese straining cloth will be required to make a cover for the curd rack in the cooler, and two measure glasses for measuring rennet and also a cheese brush.

With reference to the rennet and colouring the quotation is given for and at per one bottle, and of course seems high, but in the case of ordering a plant and intending going in for cheesemaking, it would be far better to order a fair quantity in original cases for importation, when a much lower quotation would be given.

Rennet and colouring both keep well as long as they are well corked and kept out of the strong light, although one should hardly order more than is requisite for one season.

September Tobacco Bulletin.

By GEO. M. ODLUM, Agricultural Assistant.

Since the date of the last Tobacco Bulletin, Mr. Rice, the manager of the Salisbury Tobacco Warehouse, and the writer have met, or concluded correspondence with, the leading manufacturers of this and other countries, and have not only arranged a satisfactory sale for the whole of the crop of Rhodesian tobacco at present in the warehouses, but have opened up markets that require very largely increased quantities of tobacco. This does not mean that the careless grower now has his opportunity, for the insistence on quality is greater than ever; but it does mean that the industry has passed the experimental stage, and has become staple and certain, thus giving every farmer with suitable soil the opportunity to diversify his crops and make an increased income. The result of the negotiations has been that considerable new capital is to be invested in new plantations, and an increase of activity throughout the industry.

However, the seed sowing time is at hand, and it is only by energetic action that new planters can share in the profits this season—although it would be unwise to delay for that reason, inasmuch as a year's experience is a year's gain.

Virginia planters will have sown their first beds in preparation for November plantings, and should not neglect to make increased sowings throughout October, in consideration of the fact that December is often an ideal planting month.

Turkish planters are now making their earlier beds, for their largest sowings are during November and December.

All progressive planters have naturally burnt and covered their seed beds, and, where possible, fertilised them with commercial manures. If the seedlings are slow in growth after the first six weeks, they may be stimulated by liquid manures or light top dressings of commercial fertilisers. The fertiliser should be washed into the soil at once, for its presence on the leaves will result in injury.

It is rarely that a planter has a sufficient number of seed beds, and many suffer in consequence. If the beginner doubles his estimates in this particular, he will not have many plants to throw away.

We have before mentioned the necessity of securing fertilisers, plant bed covering, needles, sticks, twine, baskets, etc., well in advance of the season, but it is apparent that some are still delaying, and in consequence must in the end fall back upon the more expensive and unsatisfactory makeshifts.

Now that the planting season is approaching, the question naturally arises as to whether the lands are clean or whether they are full of cutworms. Fallow lands in which weeds and grass are permitted to grow are excellent breeding places for these pests, but where the field is constantly cultivated, the insects are often starved out. Any farmer will admit the value of fowls and turkeys as insect destroyers; but he often forgets to allow them the opportunity to visit his tobacco field—until after a crop has been partially destroyed. Give the birds a chance to demonstrate their worth.

The cultivation of the soil from the beginning of the season until planting time has a value that is seldom appreciated. Constant tillage conserves the moisture and means that planting may be done during rainless periods when otherwise the work would be at a standstill. The nitrates so essential to the quick growth of the young plant only develop in a soil containing moisture, and their development is also hastened by the aeration consequent upon tillage. One of the quickest growing and best crops of Turkish raised last year was planted and matured after the rains had ceased, and its success was due to the fact that the soil had been carefully tilled throughout the season. Other crops planted on roughly prepared lands at the same time were failures.

BUILDINGS.

As is generally known, the production of Bright Tobaccos is impossible without flue-barns, and their after-handling impracticable without good packing sheds. Plans of these buildings may be secured from the Agricultural Department.

Turkish planters will require a large building in which to hang their semi-dry leaf, and also in which the green leaf may be "yellowed" during warm, moist weather.

A commodious cellar becomes a necessity for "yellowing" during dry or cool weather, while without such a cellar the leaf cannot be ordered for grading or packing.

With respect to the curing frames, we will shortly offer some suggestion that will reduce the labour involved, and largely do away with the expensive bucksail.

Any method of sun-curing is impossible during rainy weather, and the Turkish planter will save himself loss during that period by the use of a flue-barn.

Warehouse Charges for Handling and Selling Leaf Tobacco, Salisbury and Bulawayo.

The charges for handling and selling leaf tobacco vary somewhat according to the condition of the leaf and the amount of work its treatment necessitates, but the following were fixed as the maximum charges:—

Dark Pipe Leaf (ungraded)	1½d. per lb.
Dark Pipe Leaf (graded)	1d. „
Bright Leaf (ungraded)	1¾d. „
Bright Leaf (graded)	1¼d. „
Cigar Leaf (ungraded)	2½d. „
Cigar Leaf (graded)	2d. „
Cigar Leaf (when not fermented before sale)	½d. off above.

Turkish Type Leaf.

Turkish Leaf (ungraded and un- baled)	4d. per lb.
Turkish Leaf (graded and pastelled)	1½u. „

Graded and ungraded refer to the condition when received by the warehouse.

(Sgd.) F. G. SMITH,

for Local Accountant.

Fruit-Fly Netting.

A limited quantity of specially selected Fruit Fly Netting has been imported by the Department, and is on sale at the Anglo-African Trading Co., Ltd., Stores at Salisbury and Bulawayo, at the following prices:—

- 4 $\frac{1}{4}$ d. (fourpence farthing) per yard, 72 inches wide.
8 $\frac{1}{4}$ d. (eightpence farthing) per yard, 144 inches wide.
-
-

Correspondence.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Dear Sir,—

I must again trespass on your kindness, and request you to publish this letter in your next "Agricultural Journal."

Mr. Eyles, in his valuable article "Vegetable Fibres for Rhodesia," Part II., which appeared in the August No. of your "Agricultural Journal," has again made some slight errors, which may be very misleading to farmers in this country who are attempting or thinking of growing fibres.

Before going into these particulars, I would like to point out that it was not I who attacked Mr. Eyles's figures and statements, as he infers in his last article, but on the contrary it was Mr. Eyles in his first article on "Vegetable Fibres for Rhodesia" which appeared in the April No. of the "Agricultural Journal," who attacked my figures and statements in my letter, which you very kindly published in your October No., 1907.

The letter I wrote you, and which you published in your June No., was simply a reply for the benefit of farmers in Rhodesia, as I happened to have been in the hemp and fibre business for about 15 years in England, and was looked upon more or less as an expert there.

I doubt very much if there is anyone in Africa who has had the chances of learning what I was forced to learn of the hemp and fibre business, and it was this fact which made me come forward and correct some of Mr. Eyles's figures and statements.

As regards Mr. Eyles on my "personal character" in his August article, this I shall ignore entirely, as I neither care what he, or anyone else thinks about me, nor has it as far as I can see, anything whatever to do with growing fibres in Rhodesia.

But errors or misleading statements in connection with fibres and fibre-growing is another matter altogether, and for the benefit of Rhodesia, as a Rhodesian farmer I think it my duty to come forward and correct these.

1st. Mr. Eyles quotes Messrs. W. H. Hindley & Co., of London, as "the best London authority" in attempting to prove that my figures as regards the average prices of jute are incorrect. (I will leave the readers of the "Agricultural Journal" to judge whether he has done so or not.)

Messrs. W. H. Hindley and Co. may be as far as I know "the best London authority," but London is not one of the markets for jute, and for one bale of jute that is used in London, a thousand bales are used in Dundee.

The two big markets for jute in the world are Calcutta and Dundee, and for the most reliable information as regards jute I would advise anyone to go to these cities. Before leaving this matter, I would mention that I have a letter before me, dated November 27th, 1907, from Messrs. Ide and Christie, 72, Mark Lane, London, E.C., who are probably the largest fibre brokers, auctioneers, and valuers in the world, who write me confirming my letter which appeared in the October (1907) No. of the "Rhodesian Agricultural Journal," and which Mr. Eyles attacked. They also inform me that I was wrong in that letter in stating that Messrs. W. H. Hindley and Co. were brokers of hemp and fibres, but that they were merchants and dealers.

2nd. Manila Hemp (Abaca).—Mr. Eyles quotes the "Kew Bulletin on Fibres," pages 95 and 107, which states that "this plant will not grow in any country having a distinct dry season." All I can say is that this information is entirely wrong, and that the Phillippine Islands, where up to now all the Manila fibre has been grown, have a most decided and distinct dry season every year, and often not a drop of rain falls there for nearly six months. The rainy season in these islands includes June, July, August and September, when often 60 inches will fall. The cool season is October, November, December, and

January, when little rain falls, and the hot season is February, March, April and May, when not a drop of rain falls.

In this season, however well seasoned the wood may be, tables, wardrobes or door-panels will split from end to end, or top to bottom, with a noise like a pistol shot, on account of excessive dryness.

The Manila hemp (Abaca) requires a rich volcanic loam soil and a high altitude; these are the two essential things, and both of these Rhodesia possesses, and I have the greatest confidence in thinking that this kind of fibres can be grown well in certain parts of Rhodesia, provided always we can get the genuine plants here, and not imitations as so often happens.

3rd. Sunn Hemp I repeat is not a "jute substitute." There is no special meaning in the word substitute; a jute substitute simply means that in manufacturing it will "take the place of" or substitute jute.

I care not who Mr. Eyles's authority is, but this I do know that one cannot manufacture and weave Sunn hemp to take the place of jute.

I have a little Sunn hemp here, and if anyone likes to examine same compared to jute, it will not take me two minutes to prove I am right.

If Mr. Eyles still thinks I am wrong, let him write to any actual manufacturer and weaver of jute cloths. Let me here warn my readers from taking everything for Gospel that has been written by such authorities as Mr. Eyles quotes. In the main, of course, they are correct, and the books most valuable, but one must always remember the trade secrets which exist, and which no firm will explain *in toto* to a writer. Let me give an example. There are every year sold and paid for several million pounds worth of Manila ropes; these ropes are guaranteed by the manufacturers to be pure Manila hemp, and the colour has to be the same as quality, "Fair Current." It costs about £7 per ton to make the fibre or hemp into the finished article, and yet the majority of contracts are placed at a lower price than the actual cost of "Fair Current" Manila hemp.

This would mean on the face of it a loss of £7 per ton to the manufacturer, and yet the manufacturer makes big profits.

Now, is the manufacturer going to explain his secret to the writer of a book? And the same thing applies to a large grower of a particular hemp or fibre who has found another secret out which enables him to obtain £2 or £3 more per ton than his neighbours.

In this country I have been sold pure Manila hemp ropes which on examination I have found contain not a single thread of Manila fibre; also I have had to pay 1s. 6d. per lb. for bag twine supposed to be flax, but which was entirely faked jute, and worth only about 2 $\frac{3}{4}$ d. per lb.

These few instances will explain how tricky the hemp and fibre business is, and how easy it is to give information *not quite the truth*, and this *not quite the truth* makes all the difference in the world.

Now, Mr. Editor, I will not encroach on your valuable time and space any more on hems and fibres, but will come to a subject which I consider infinitely more important—of such importance is it that I hope and believe it may begin a new epoch in the history of Rhodesia. By this I mean a new industry which will bring the one necessary element required into this country (*i.e.*, money) to help to make Rhodesia what she ought to be, the wealthiest country in the world.

To commence with, I want to know is there a Government botanist in Rhodesia of such proven qualification that anyone can take a plant or tree to him and get it classified. I am more than ever certain that such a man is needed at present. It is 20 years since I took first prize in botany at one of the largest of England's public schools, and yet I find myself to-day practically ignorant on this subject. It would take me two or three years' hard work to come up to where I left off 20 years ago, and another two years to get myself up to date again.

I mention all these details because it has enabled me to classify a few plants and trees, and yet I still find myself hopelessly at fog in many plants and trees I have noticed out here which may be very valuable indeed. Now for what I have found.

The two principal discoveries are trees, and these trees are, I believe, most valuable timber.

1st. The white iron wood tree. (I am ignorant of its Latin name or genus.) Some of the larger trees are 80 to 100 feet high, and two or three feet in diameter.

There are thousands of tons of this wood in the country; neither the borer nor the white ant will touch it. I have had one tree down a white ant's nest for two years, and it is as good to-day as when I put it down. I am informed that the two wooden posts which hold the skip in its place for crossing the Mazoe River at Simonia were put in by Mr. George Reid, of the Public Works Department, some ten years ago, and that they are as good to-day as when they were put in.

This wood, although extremely hard, could be sawn into logs and planks, and would make the strongest and best heavy building wood, or even furniture, in the world. For ordinary fencing poles for farms, in place of iron, nothing can beat them, and for wood blocks for wood-paving, I think they would wear better than the best of the West Australian hardwood.

2nd. The true mountain mahogany tree, with the wavy dark grain. There are thousands, nay, millions of tons of this wood in the country, and I believe this wood is worth £20 to £30 per ton.

At the present time the young trees are being cut down for poles and firewood for the mines. On my own farm, where a large quantity has been cut for mining purposes, it has been too much trouble to cart them away, and the poles are lying rotting on the ground where they were cut more than eighteen months ago.

It is to prevent this wicked loss to the country that I am now asking you to publish this letter. This mahogany tree has nothing whatever to do with the so-called mahogany berry tree which is not a mahogany tree at all.

The tree I am talking about is the most valuable of all mahogany, and it rarely goes 2 feet diameter.

In fact I believe this species of mahogany grows to a larger diameter in Rhodesia than in the other countries where it is found; this particular genus rarely going more than 15 inches in diameter in other countries.

When the Directors of the Chartered Company were in Salisbury, I tried my utmost to get an interview with them to tell them of these two valuable timber trees, but they were too busy to see me, and had already had an interview with Chishawasha in connection with the valuable timber in Rhodesia.

The trees I am speaking of do not grow at the altitude of Salisbury, but commence where the altitude is 1,000 feet lower, so probably the Chishawasha Fathers never have seen these mahogany trees.

The natives tell me this tree grows right to Zambesi from here, and that they cut the young trees down for the sake of the small branches for making wicker baskets of. It is therefore impossible to say what damage is being done to these trees by the natives alone.

It was my intention when I was refused an interview with the Directors to say nothing whatever about these trees, but let them get destroyed, as it was of no benefit to me or any other farmer on the Gold Belt, we having no right of any kind to timber or new discoveries of anything we may happen to make. But lately I see this is a foolish narrow-minded policy which will benefit no one; further, it is quite possible the Government may have the same opinion of my character as Mr. Eyles has been courteous enough to put in writing. So instead of hitting back, I am giving the Government the benefit of my knowledge gratis.

I shall be curious to hear if I shall ever receive a letter of thanks. Again apologising for the space my letter will take up in your "Journal."

Yours faithfully,

(Sgd.) J. COOKSON, JUNR.

Brundrett, Mazoe, September 3rd, 1908.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Dear Sir,—

I am laying out an orchard, and have read Mr. McIlwane's articles in the "Agricultural Journal" on Citrus planting, etc., with much pleasure; but in a pamphlet by Messrs. Pickstone I see that frost kills off the trees. Now here I have registered frost at least four days this season on my verandah, so of course it would have been more severe in the open. Will this preclude me from embarking in Citrus cultivation, and how much, if any frost, will they stand?

I thank you for your advice *re* sore feet in imported bull, and the treatment has much improved him.

Under separate cover I send two samples of fibre growing wild here. Are they known?

Yours sincerely,

(Sgd.) HAROLD M. SMART.

Indiva Farm, Gwelo, August 22, 1908.

The reply given by the Secretary for Agriculture proceeded:—

“With reference to your inquiries *re* ‘Citrus’ growing and the amount of frost they can stand, I beg to state that the time citrus trees are most liable to be injured by the frost is when they are quite young and standing near the ground. If they are protected for the first season by placing shields of grass round them during the months when the frost is prevalent, they will stand three or four degrees of frost without injury.

“Low-lying situations where the air is quite still are much more susceptible to frost than higher situations in the open.

“The light frosts which occur during the winter seasons do not appear to have much effect on citrus trees when once they get a good start.”

“The first of the two samples of fibre, the ‘Water Rush,’ is of no value as a fibre. It might possibly be suitable for paper making if procurable in sufficiently large quantities at a low cost. The second sample is strong, but somewhat harsh and short. It is impossible to state from the sample sent what the fibre is, but if identification and value is desired, a large sample, about 10 lbs. weight, should be sent of the fibre and the plant, when it will then be examined and reported upon.

“If such a sample is forwarded, it should be stated whether it is found in sufficient quantities to warrant its exportation, if found to be of commercial value.”

TO THE EDITOR, “AGRICULTURAL JOURNAL.”

Dear Sir, —

Every farmer must have experienced a desire for some reliable indication of the correct time of day, or for some means or standard by which to set his timepiece.

Could you induce any of your readers, contributors, or any member of the Company's staff to give a simple way of constructing a sundial? It would be of the greatest service to those who live in outlying districts.

Will anybody oblige?

(Sgd.) C. S. HERON.

Eagle's Nest, Headlands, August 4th, 1908.

FIGS.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Sir,—

I have heard it repeatedly suggested that if the many varieties of common figs could be grafted on to the wild stock of this country that we would get rid of the fig borer. With this object in view, I grafted a wild fig with our cultivated varieties. I was successful in getting several to grow and the amount of growth put on in one season was very good, one shoot putting on six feet. It came into bearing the second year with good and juicy fruit. The third year I saw by the "sawdust" that a borer had got between the stock and the scion. I cut it down and found the borer.

I have always been under the impression that the borers did not attack the wild fig. On a recent trip to Inyana, in company with Major Everett, we found under a very fine wild fig tree some brownish eggs which resembled in shape those of the Cameleon. On breaking one I found that it had the embryo of what I would call the fig borer, and on further examination we found that at the roots of the wild fig there were large numbers of eggs. The branches also showed signs of the attacks of the beetle. It is plain therefore that the wild fig is just as subject to the attacks of the borer as the cultivated varieties, but that they are able to make good the wood destroyed by the borer; that the eggs of the beetle are deposited at the roots of the wild fig, where they hatch out and mature.

I would therefore advise anyone who has figs in his orchard to destroy all wild figs in the vicinity, and to thoroughly cultivate round the roots of his trees in the autumn and winter months, and if he could allow his poultry free run so much the better.

I send a few eggs.

T. B. HULLEY.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Sir,—

I have read with interest the article on "Cattle Breeding in Mashonaland" by C. C. Macarthur, in the August issue of your "Journal," and now take advantage of his request that his remarks would lead to further discussion on the part of others.

I quite follow with Mr. Macarthur in everything he says, but would it not be rash for ranchmen to discard a bull like the Africander, and put the very purest bull procurable in his place?

If it is impossible to expect a pure-bred bull to do well amongst the herd—without feeding morning and night—then I take it that the offspring will require feeding also.

The question is: Will it pay ranchmen to feed the progeny of say three or four hundred head breeding stock?

My humble opinion is, that as slowly and gradually as our veld improves, so in the same ratio, let us slowly grade up to the standard Mr. Macarthur suggests. Again, it is no criterion to experiment with five or six native cows and a pure-bred bull, against a herd—because where the six or seven would get pickings on this veld and get fat—a herd would be starving.

I am, Sir,

Yours truly,

(Sgd.) RALPH BLISS.

Lone Cow Estate, Ayrshire, Southern Rhodesia.

September 18, 1908.

Export of Maize Oversea.

The arrangements which have been made for facilitating the export of maize beyond South Africa have now been published for the information of farmers in Rhodesia.

The amount per bag 2s. 6d.—covering all charges—is a reasonable one, and is such as will henceforth prevent a glut in the local markets when the supply exceeds the demand.

Although during this present season there is no export to be expected, yet it will be reassuring to farmers to know that they may pursue maize growing to any extent for next year's crop, without the fear of prices being reduced through the local markets being over supplied.

BEIRA AND MASHONALAND RAILWAYS.

EXPORT OF MAIZE OVERSEA BEYOND SOUTH AFRICA.

On and from 1st September, 1908, the following arrangements will come into operation for the export of maize oversea:—

1. The Railway Company undertakes, subject to the following conditions, to receive, for export *via* Beira, consignments of maize at any station on the line of railway between Bulawayo and Beira—including branches—and to dispose of the same on account of the sender in England at market price on arrival, and to remit the amount realised by the sale of the maize, less 2s. 6d. per bag to cover rail, freight, shipping charges, wharfage, stamps, insurance, commission and other charges incidental to the conveyance to and disposal of the maize in the English market:—

- (a) The amount remitted to the sender will be the price obtained on disposal less 2s. 6d. per bag.
- (b) The Railway Company does not undertake to land maize on the English market on any particular date, but the most expeditious transit reasonably and economically possible will be arranged. The maize will be disposed of in England for cash as quickly as may be consistent with securing satisfactory prices at the rates ruling at the time. The net amount realised will be paid to the sender by the Railway Company without delay.
- (c) The Railway Company will be responsible for ordinary risks, but against any special risks such as heating, weevils, etc., consignors must insure themselves if they desire to cover themselves against such risks.

- (d) The Railway Company reserves to itself the right to refuse any maize found to be weevily.
- (e) Maize will be sold on weight as ascertained at port of shipment, but if necessary an allowance of 2 per cent. for sifting and drying out in transit may be claimed should it be ascertained on delivery that such loss has occurred.

Minimum Consignments.

The minimum number of bags per consignment which will be accepted for export is 100 bags.

Notice of Shipment.

To facilitate shipping arrangements, intending exporters should notify the Station Master at least a fortnight before handing in consignments of the quantities they intend to export.

Bags.

All bags must be new, double sewn, and must contain 200 lbs. full weight nett. Arrangements are being made whereby bags may be obtained from the Railway Company by growers of maize at a reasonable cost for cash on delivery. Particulars as to cost of bags, etc., will be notified later.

Grading.

All maize for export will be graded by a Grading Officer appointed by the Railway Company at Beira.

Each bag will be marked according to grade.

The grades are:—

Fair average quality	... ..	Flat White.
"	... ..	Flat Yellow.
"	... ..	Round Yellow.
"	... ..	Mixed.

Maize not coming up to the authorised standard will be marked "Below Grade" and sold as such.

Cash Advances.

The Railway Company has arranged to advance to the senders one-half of the current value immediately maize is accepted for shipment at the port of despatch. (Such advances to bear interest at the rate of 6 per cent. per annum.)

Samples of the various grades will shortly be available for examination at all stations. Samples may also be obtained from the Department of Agriculture, Salisbury, at a cost of 1s. per sample.

C. WIBBERLEY,
Manager.

Salisbury, July, 1908.

Arrangements have been made with the Beira and Mashonaland Railways to provide facilities for the export of maize from Rhodesia to the United Kingdom. These arrangements have been attended with some difficulty, and the Railway Companies have made great sacrifices in their rates in order to assist growers to reach the English market. It is earnestly hoped that when Rhodesian growers are in a position to respond to the facilities offered they will remember that they also can contribute materially towards the success of an enterprise which must prove of great benefit to the whole of Rhodesia.

The principal point to bear in mind is uniformity of quality and type.

Until farmers have ascertained accurately how the more valuable small round-berried yellow varieties of maize (such as is grown in South Russia, known to the trade as Odessa and Cinquantina) crop in Rhodesia, growers are recommended to aim at uniformity of quality in flat, white maize, such as:—

- (1) Hickory King,
- (2) Boone County,
- (3) Salisbury White,

and one good variety of round yellow maize.

Further information and advice can be obtained from the Agricultural Department, Salisbury, where samples of official standards of quality for export can be seen, or they can be obtained at a cost of 1s. per sample on application to the Department.

The maize should be sent forward reasonably free from dirt and cob, and entirely free from weevil. Nothing would militate so seriously against the success of maize export from Rhodesia as that oversea buyers should be in doubt as to the quality of the shipments coming forward.

The maize will be disposed of in England for cash as quickly as may be consistent with securing satisfactory prices, at rates ruling at the time. The amount realised by the sale of the maize, less 2s. 6d. per bag to cover rail freight, shipping charges, wharfage, insurance, commission, and all other charges, will be immediately remitted to the sender by the Railway Company.

The Railway Company has arranged to advance to the senders one-half of the current value immediately maize is accepted for shipment at the port of despatch (such advances will bear interest at the rate of 6 per cent. per annum).

WEEVIL.

Nearly all countries where maize is grown are troubled with weevil, and the greatest possible care is taken to destroy them and reduce the evil.

The importance of making every possible effort to prevent mischief from the weevil pest cannot be too strongly urged upon growers in Rhodesia.

All refuse, dust and blowings obtained when the maize is being prepared for market should be immediately burned, and any method whereby weevil can be trapped and destroyed should be adopted and encouraged.

Maize which is only slightly affected can be passed over a wire screen with a mesh sufficiently fine to allow the maize to run over and the weevil to fall through, when the latter can be brushed up and destroyed.

All lofts and sheds where maize is stored should be periodically brushed down and the refuse and dust burned. The walls should be lime-washed from time to time, and with the lime should be mixed a proportion of carbolic and Russian tallow or other grease.

Further information can be obtained from the Agricultural Department, Salisbury.

Epitome of Cattle Inspectors' Returns.

JULY AND AUGUST, 1908.

SALISBURY.

District free from contagious disease.

BULAWAYO.

No fresh outbreaks contagious disease. The cattle removed from the Coast Fever infected area in January last still remain healthy.

Animals tested with Mallein on importation: Horses, 179; mules, 306; donkeys, 369. All proved healthy.

SELUKWE.

This district is now free from contagious disease. The last case of African Coast Fever occurred in July, 1907. No alteration, however, will be made in the restrictions on cattle movement until about the end of the year.

GWELO, ENKELDOORN, HARTLEY, MEL-
SETTER, GWANDA, BULILIMA, AND
MANGWE.

These districts are free from contagious disease.

VICTORIA.

This district is now free from contagious disease. The last definite case of African Coast Fever occurred in June, 1907. Two doubtful cases occurred the following August, since when all the infected cattle have remained healthy.

UMTALI.

African Coast Fever.

Fresh Outbreaks: None.

Existing Outbreaks: At No. 1 Camp (Raheen) the removal of the two infected herds to clean veld was satisfactorily carried out.

At No. 2 Camp, owing to the restricted amount of clean veld at our disposal, we have been unable to eliminate the disease from the infected herds. Temperatures are taken daily, and all animals showing symptoms of fever are removed to a small enclosure. It is hoped by this method to limit infection to a very small area.

At No. 3 infected area, the removal of the infected herd to clean veld is now proceeding.

Tuberculosis.

A case of Tuberculosis occurred in a beast recently imported from the Cape Peninsula. All in contact are being tested, but owing to Redwater re-action the process is most difficult.

General.

Scab is not included in the above owing to the difficulty of obtaining accurate and complete returns.

It is prevalent, as it always is at this season of the year, amongst native flocks.

The present winter is proving to be one of the severest on record for cattle and small stock, and the losses from poverty are very considerable.

J. M. SINCLAIR,

Chief Veterinary Surgeon.

Market Rates for Agricultural Produce (Wholesale).

Bulawayo market prices for week ending September

11:—

The Grain Market this week is reported as being normal so far as business is concerned, but prices have risen slightly. There is a good demand for Trek Oxen, mostly from farmers, who seem to have secured a number of orders for transport riding for the mines. Well-bred Heifers for breeding purposes are keenly sought after. There is a good demand for Slaughter Sheep, which are difficult to get of the right quality. Onions and Potatoes have risen in price.

GRAIN.—Merchants' Prices.

Yellow Mealies	12/- to 12/9	Salt (Colonial) per bag...	16/- to 16/6
White "	13/- " 13/6	Onions	30/- " 32/6
Kaffir Corn, Mixed	11/6 " 12/6	Potatoes	28/6 " 30/-
Inyouti	9/6 " 10/9	Monkey Nuts	10/6 " 11/-
Oats (Colonial)	22/- " 23/6	Beans	22/6 " 25/-
Bran	15/- to 15/6	Pumpkins per ton	130/-
Forage, per 100 lbs.	10/- " 10/6		

LIVE STOCK.

Slaughter Cattle, fat, per 100 lbs.	35/6 to 37/6	Trek Oxen	£9 to £10 5s.
Slaughter Sheep (local)	17/6 " 19/-	Bechuanaland Goat Ewes	12/6 to 15/-
" " (Colonial)	22/6 " 25/-	Persian Ewes, 3-bred	17/6 " 20/-
Local Heifers, 2 years	£8 10s. to £10	Persian Rams	£3 " £5
" Cows	£12 10s. " £15	Horses, unsalted	£20 to £25
Dairy Cows	£25 " £30	Mules (inoculated)	£25 " £28 10s.
Colonial Heifers... ..	£10 " £16	Donkeys	£6 " £9

Johannesburg: Market prices as supplied by Hubert Morisse and Co.:—

WEEKLY MARKET PRICES.

Barley, per 163 lbs. ...	7/6 to 8/6	Lucerne, per 100 lbs. ...	7/6 to 8/3
Bran, per 100 lbs. (Colonial)	7/3 " 7/6	Manna	3/- " 3/9
Chaff, best, 100 lbs. ...	2/6 " 3/-	Transvaal Hay	8d. " 1/5
" medium	2/- " 2/3	Oats, per 153 lbs. ...	7/6 " 9/6
Eggs, per doz. (Colonial)	9d. " 10d.	Potatoes, best, per 153 lbs.	24/- " 27/6
Salt, per bag	4/6 " 6/3	" medium "	19/6 " 23/6
Forage (Transvaal)	4/- " 5/-	" inferior "	17/- " 19/-
" (Colonial), best, pr. 100lbs.	5/6 " 6/-	Onions, 120 lbs. (Colonial)	20/9 " 22/6
" med., "	3/6 " 3/9	Turkeys, Cocks	6/- " 10/6
S. Meal, best fine	26/- " 27/9	" Hens	5/- " 6/-
Rye	11/- " 11/9	Fowls	2/- " 4/6
Wheat	19/- " 20/6	Ducks	3/- " 3/6
Mealies (Hickory King Whites)	10/11, 11/2	Geese	4/9 " 6/-
" (O.R.C. Whites)	10/10, 11/-	Pigeons	8d. " 9d.
" (Yellow)	11/- " 11/6	Butter (O.R.C.)	1/- " 1/6
Kaffir Corn, per 203 lbs.	11/9 " 13/3	Pumpkins, each	4d. " 6d.
Hay, Sweet (Transvaal) ...	2/- " 2/6	Beans, per 200 lbs., sound	13/- " 46/-

LIVE STOCK.—Prime Oxen are scarce and in good demand. First-class Milch Cows are scarce. First-class Trek Oxen are scarce and in demand. There are plenty of poor and old cattle offering at low rates. Tollies have come forward freely and the market is overstocked just now. Hamels have come forward freely, but really good sheep are scarce. Good Lambs are scarce and in demand. Heavy Boer Kapaters are scarce and in demand. Prime Porkers, 60 to 100 lbs., are scarce and find a ready sale. No demand for heavy or poor pigs. Mules and Donkeys are scarce and dear, the latter particularly. Breeding Stock is a glut.

BREEDING STOCK.

Quotations are :—

Slaughter Oxen, prime—£11 10s. to £14 10s.	Sheep (Merino)—6d. per lb., 16s. 6d. to £1 7s. 6d.
Slaughter Oxen, medium—£9 10s. to £11.	Slaughter Ewes—12s. 6d. to 18s. 6d.
Slaughter Cows—£5 to £7 10s.	Lambs, 9s. 6d. to 14s.
Beef, per 100 lbs., prime—£1 12s. to £1 14s.	Goats (Boer Kapater)—11s. to 19s. 6d.
Beef, per 100 lbs., medium—£1 8s. to £1 11s.	Pigs, per lb., live weight—2½d. to 3¼d.
Milch Cows, Cape—£16 10s. to £27 10s.	Mules, large—£17 to £22.
Trek Oxen—£7 10s. to £9 10s.	" medium—£15 10s. to £16 10s.
Tollies—£4 10s. to £5.	" small—£13 to £15.
Sheep (Cape and Bastard)—5¼d. per lb.; 15s. 6d. to £1 5s. 6d.	Horses, good—£18 to £25.
	" Ponies—£12 to £16.
	Donkeys—£6 to £7 10s.
	Heifers, 12 to 18 months—£6 to £6 10s.
	" 2 to 3 years—£7 to £8 10s.
	Cows, breeding—£9 to £10.

Kimberley market prices as supplied by James Lawrence and Co.:—

Bran, per bag 100 lbs. ...	7/6 to 8/-	Yellow Mealies (Col.) 203 lbs.	10/9 to 11/6
Barley, per bag 163 lbs.	7/6 " 12/-	White Mealies (Colonial),	
Beans, Sugar, bag 203 lbs.	30/- " 35/-	hard, 203 lbs.	10/9 " 11/6
" Kaffir, 203 lbs. ...	20/- " 25/-	White Mealie Meal, 183 lbs.	11/9 " 12/3
Chaff (Colonial), bale ...	4/6 " 9/6	Oats, per bag 150 lbs. ...	9/6 " 11/-
" pressed, 100 lbs 3/-	" 4/-	Lucerne Hay, per 100 lbs.	5/- " 6/-
Forage, per 100 lbs., good	4/6 " 5/3	Onions, per bag 120 lbs.	21/- " 22/6
" inferior 3/-	" 4/-	Potatoes, per bag 163 lbs.	17/6 " 23/-
Kaffir Corn, S. African mixed	11/6 " 12/-	" (local)	18/- " 24/-
" White	11/6 " 12/6	Tobacco, per lb., good ...	4d. " 7d.
Boer Meal (Col.), unsifted	23/6 " 26/6	" inferior	1d.
" sifted	26/- " 29/-	Wheat, per bag 203 lbs. ...	19/- " 21/-
Flour (Col.), per bag 100 lbs.	15/6 " 16/6	Butter, per lb., fresh ...	1/5 " 1/6

SLAUGHTER.

	£	s. d.	£	s. d.		£	s. d.	£	s. d.
Oxen, good, prime, 600 lbs. upwards ...	7	10 0	to	10 10 0	Hamels, 40 to 45 lbs. ...	0	10 0	to	0 13 6
Cows, good, 450 lbs. upwards ...	5	0 0	„	8 0 0	Cape Sheep, good ...	0	10 0	„	0 13 6
Calves ...	4d.	per lb.	dead weight		Kapaters, good ...	0	10 0	„	0 13 6
Pigs, 100 lbs., clean, 2½d., 3d. lb. live wht.					Oxen, Trek ...	6	0 0	„	7 0 0
Lambs, 30 lbs. ...	0	8 0	to	0 10 0	Riding Horses ...	10	0 0	„	25 0 0
					Draught Horses ...	10	0 0	„	22 10 0
					Mares ...	9	0 0	„	20 0 0

Remarks.—The Market for Mealies and Kaffir Corn is firm, and prices are advancing. Forage and Oats are unchanged. Colonial Early Rose Seed Potatoes enquired for. Table Potatoes in demand, especially Early Rose. Sound dry Onions firm. Fresh Butter finds ready sale. Market glutted with Eggs, also Cabbages. Fat Poultry in demand. Oranges firmer. Slaughter Stock firm.

Salisbury: Prices of produce as supplied by Messrs. Wightman and Co.:—

Mealies ...	13/-	to	14/-	Manna Forage ...	8/6	to	10/-
Rapoko ...	10/6	„	11/-	Pumpkins, per ton ...	75/-	„	80/-
Potatoes, per lb. ...	3½d.	„	4d.	Ground Nuts, per bag ...	7/-	„	8/6
Onions, per lb. ...	4d.			Beans, per bag ...	25/-	„	35/-
Oat Forage ...	12/6	„	13/-				

Live stock prices supplied by Messrs. Whitfield & Co.:

Ordinary Milk Cows	£12 10s. to	£15	Donkeys, Colonial	...	...	£7
Mashona Cows	...	£9 „	£10	Sheep, Colonial Ewes	28/-	to 30/-
Trained Oxen	...	£10	£10	Slaughter Sheep, Colonial	28/-	„ 30/-
Untrained Oxen	...	£7 to	£8	Fowls, Colonial Hens	3/6	„ 5/-
Slaughter Cattle, per 100 lbs.	...	40/-		Pure-bred Fowls	10/-	„ 15/-
Well-bred Heifers	...	£15		Turkeys	15/-	„ 18/-
Horses, fair class Hacks	£25 to	£30	Ducks	...	4/-	„ 7/6
Mules, first class	...	£25				

For Transport Cattle in fair condition there is a good demand. Milk Cows are also in keen demand. Slaughter stock prices are hardening. There is a good demand for Ewes and Slaughter Sheep. Mules are a slow sale, and the same with Donkeys. Owing to the northern ports being empty of cattle there is every indication in the near future of prices stiffening. Owing to Victoria District being thrown open there are certain supplies coming from that quarter, but so far as can be learned the supply will not cover the demand. In the Hartley and Mazoe Districts Transport Cattle are much in request. In the British Grain Market Messrs. Fear, Colebrook & Co., Ltd., Southampton, report August 29th:—“Prices remain about unchanged for Maize, with a very much restricted demand. Forward Maize is rather easier. Oats and Wheat remain unchanged. English Wheat is coming out very fine, quite the best quality we have had for many years, though we have had much larger crops.”

SOUTH AFRICAN STUD BOOK.

A RECORD of all classes of Stock, the object being to encourage the breeding of Thoroughbred Stock and to maintain the purity of breeds, thus enhancing their value to the individual owner and to the country generally.

Applications for Membership and entries of Stock should be addressed :

For Cape Colony to—

A. A. PERSSE, P.O. Box 703, CAPE TOWN.

For Transvaal to—

F. T. NICHOLSON, P.O. Box 134, PRETORIA.

For Orange River Colony—

E. J. MACMILLAN, GOVERNMENT BUILDINGS,
BLOEMFONTEIN.

A. A. PERSSE,

Secretary South African

Stud Book Association.

Government Notices.

No. 188 of 1906.

26th July, 1906.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the regulations promulgated by Government Notices Nos. 264 of 1905 and 164 of 1906 and declare the following to be of full force and effect in lieu thereof within the Province of Matabeleland, exclusive of the District of Gwelo as described and defined by section 4 (c) of the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which area is hereby declared to be an area infected with a destructive disease and is hereinafter called the said area.

1. No cattle shall be moved from any other part of the Territory of Southern Rhodesia into the said area.

2. The movement of cattle to, from or across any defined area appearing in the schedule hereto or any area which may hereafter be added to that schedule so long as such area remains in and is not withdrawn from the schedule is absolutely prohibited save and except as is provided for in sections 3, 6 and 7 of these regulations.

3. The movement of all cattle within the said area is prohibited save and except

- (a) On permission granted by an Officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within an area of land enclosed by a substantial fence.
- (d) Within a radius of four miles of any native kraal situate within the boundaries of any Native Location or Reserve, and as is hereinafter further provided.

4. The movement of cattle for slaughter, *bona fide* farming, mining or breeding purposes or for private milk supplies shall be permitted under the written authority of an official thereto duly authorised subject to the following terms and conditions:

- (a) That cattle are moved to the nearest or most suitable railway station or siding, and thence by rail to their destination, or, where the district is not served by a railway by the most suitable route to their destination, all cattle travelling by road shall be under the personal supervision of a responsible white man approved of by the Cattle Inspector or of a native approved of by the Native Commissioner and the Cattle Inspector of the district within which the movement takes place.
- (b) That written permission of owners, occupiers or managers of all occupied land, and in the case of Native Reserves, of the Native Commissioner of the District over which such cattle shall pass to the nearest station, siding or destination is obtained; provided that in the event of such owners, occupiers, managers or Native Commissioner refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (c) That such cattle shall before being moved, be thoroughly disinfected by dipping or by spraying to the satisfaction of the Officer issuing permit, and at the expense of the owner of such stock, and if intended for slaughter shall where possible be branded under the supervision of the Officer issuing permit with the letters "V.D." on the near side of neck.

- (d) That cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (e) hereof, be immediately taken to the prescribed quarantined area and there be quarantined and confined, and where not branded in terms of clause (c) hereof, be similarly branded under the supervision of a duly authorised officer.
- (e) That all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying in terms of clause (c) hereof shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area.
- (f) That all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of their admission, and under no pretext whatever shall cattle so admitted be permitted to leave the said area alive; all such cattle shall after admission to the said area be considered as likely to be infected with disease and if found wandering outside the said area or in possession of any person may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (g) That on arrival at destination cattle other than slaughter cattle shall be dipped or sprayed and shall be effectually isolated from all other cattle on the same land for a period of four weeks.

5. The movement of working cattle may be permitted under the following conditions only:—

- (a) Within a radius of six miles of any working mine or mine in course of development for the purposes of such mine, provided that such cattle shall only be moved under a permit of a duly authorised officer, and shall be dipped every fourteen days or where no dipping tank is available be thoroughly sprayed with an approved dip, provided further that such permission shall not be granted when it conflicts with any other section of these regulations, or if such movement is considered dangerous to other cattle within the six mile radius.

Sub-section (b) cancelled by Government Notice No. 216 of 1907.

6. In the event of the failure of pasturage or water on land on which cattle are located, the movement of such cattle will be permitted, provided:—

- (a) That such movement shall be to nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 4 (b) hereof.
- (c) That movement shall be by permit only of a duly authorised officer, and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector and Native Commissioner of the district.

7. For the purposes of cleansing an area from disease the Controller of Stock may, on the authority of the Administrator and on the advice of the Chief Inspector of Cattle, and subject to such conditions as may be stipulated, permit the removal of cattle from a scheduled area to an adjacent clean area.

8. All applications for the removal of cattle under sections 4 and 5 hereof shall be submitted to and approved of by the Veterinary Department before being granted and when such movement is from one Native District to another the application shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Native Commissioners of the Districts to and from which the removal is made.

Section 9 cancelled by Government Notice No. 114 of 1908.

10. All veld-fed animals within the limits of the various Commonages or Townlands or other centres where there is common grazing ground, and wherein cases of African Coast Fever have occurred within two years of the date of publication hereof, and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days: provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

11. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations in respect of any dipping done at a public dipping tank :—

For cattle (over six months)	..	..	..	3d. per head.
For horses and mules	..	..	..	3d. „
For calves (six months and under)	..	..	..	2d. „
For small stock	..	..	..	$\frac{1}{2}$ d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under above tariff.

12. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed ; provided that the Inspector may, at his discretion, carry out such disinfection with the assistance of and at the entire cost of the owners of the animals to be sprayed, the cost of such disinfection being payable at the time of the spraying.

13. Whenever the owner, occupier, or manager of a farm shall adopt measures for the cleansing of his cattle running thereon, either by spraying or dipping or by any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the said farm to cleanse such cattle, and the Native Commissioner of the District in which such farm is situated may enter into an arrangement with the native owners of cattle to cleanse such cattle at a charge to be mutually agreed between the said owner, occupier, or manager and the said native owners.

14. Any person contravening any of the provisions of these regulations shall, upon conviction, be liable in respect of each offence to the fines and punishments prescribed by the Ordinance, and in cases where no special punishment is provided, to a fine not exceeding £20, or in default of payment to imprisonment with or without hard labour for any period not exceeding three months, unless the penalty be sooner paid.

SCHEDULE.

- (1) Fingo Location.
- (2) An area within a radius of ten miles of Ntolas Kraal on the farm Emangeni.
- (3) An area comprising the farms Upper and Lower Umvutcha, Reigate, Upper Nondwene, Mapane, Government Farm No. 5, Trenance and the plots adjoining the farms Umvutcha.

No. 216 of 1907.

Department of Agriculture,

Administrator's Office,

Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the " Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw Sub-section (b), Section 5 of Government Notice No. 188 of 1906, and declare the following to be of full force and effect in lieu thereof :—

Within the said area from private farms and trading stations to any centre of consumption, or to a railway station or siding, or to and from any other farm, or from a mine to a railway station or siding for the purpose of transporting fuel or mining timber, under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of the owners, occupiers, or managers of occupied lands proposed to

be traversed, and, in the case of native reserves, of the Native Commissioners, and that such cattle shall before being moved be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit; provided further that, in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 217 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw as from the 1st October, 1907, the regulations promulgated by Government Notices No. 189 of 1906 and No. 185 of 1907, and declare that the following shall be of full force and effect in lieu thereof from that date within the province of Mashonaland and the fiscal division of Gwelo, as defined by the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which areas are hereby declared to be areas infected with a destructive disease:—

1. The movement of all cattle within the said area is prohibited save and except:—

- (a) On permission granted by an officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within any area of land enclosed by a substantial fence.
- (d) Within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp.
- (e) Within a radius of four miles of any native kraal situate within the boundaries of any native location or reserve, the site of such kraal shall be deemed to be the place where it is situated at the date of publication hereof, and as is further provided.

2. The movement of cattle for slaughter purposes shall be permitted under the written authority of an officer thereto duly authorised, subject to the following terms and conditions:—

- (a) That such cattle are moved by the most suitable route to the centre of consumption. All cattle travelling by road to be under the personal supervision of a responsible white man, or native approved of by the Cattle Inspector.
- (b) That before cattle may enter from a native district not included in any particular group of districts as defined in Section 6 (b) the written permission of owners, occupiers, or managers of all occupied land, and, in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass to the nearest station, siding, or centre of consumption is obtained; provided that in the event of such owners, occupiers, managers, or Native Commissioners refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal if satisfied that the necessary permission is withheld without good and sufficient cause.

- (c) That such cattle shall, on arrival at the centre of consumption, subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area, and there be quarantined and confined, and branded with the letters "V.D." on the near side of the neck under the supervision of a duly authorised officer.
 - (d) That all cattle brought into any centre of consumption shall be disinfected by dipping or spraying at the public dipping station before being taken to the quarantine area.
 - (e) That all cattle admitted to the quarantine area shall be slaughtered within 21 days of their admission, and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter. All such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and, if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
 - (f) That intermediate depots, or concentration camps, for slaughter stock may be allowed at centres approved of by the Chief Inspector of Cattle, provided that no such camp shall be situated within less than a radius of five miles of any commonage, town lands, or grazing ground common to any mining camp, railway station or siding.
3. The movement of cattle required for *bona fide* mining, farming, breeding and dairying purposes and for private milk supplies may be permitted on the written authority of a duly authorised officer, subject to the following terms and conditions:—
- (a) That such movement shall take place subject to the conditions set forth in Section 2 (a) and (b).
 - b) That whenever such cattle shall at any place along the route have passed within a radius of less than five miles of an infected area, the cattle shall upon arrival at their destination be effectually isolated from all other cattle on the same land for a period of four weeks.
 - (c) That whenever the cattle being removed shall at any portion of the route have passed within native districts where infected areas exist, the consent in writing to such movement be obtained from all owners of cattle on farms adjoining that to which movement takes place; and in the case of native reserves of the Native Commissioners of the districts; provided that should such consent be unreasonably withheld by any of the aforesaid persons the Controller of Stock may direct the issue of a permit.
 - (d) That such cattle required for breeding and dairying purposes, or for private milk supplies, when moved to within the boundaries of the various commonages, town lands, or of grazing ground common to any mining camp or other centre where cases of African Coast Fever have occurred within 15 months, shall be confined in some enclosed place approved of by the local Cattle Inspector, and, if a case of African Coast Fever occur in such enclosure, shall not be liberated therefrom except in terms of Section 5 hereof, until 15 months after the last occurrence of African Coast Fever within the enclosure in which they are kept, nor shall they be allowed, after liberation, to run upon any of the land specified herein, unless such land has been free from African Coast Fever for a period of 15 months.
 - (e) All cattle introduced in terms of the preceding sub-section (d) shall, on arrival, be taken direct to the Government dipping station and there be dipped or sprayed.
 - (f) All cattle confined in terms of clause (d), and all calves born within the said enclosures, shall be sprayed every 14 days, as may be directed by the Cattle Inspector.
 - (g) No cattle shall be moved from one native district to another unless with the permission of the local Veterinary Officer and the Cattle Inspectors of the districts to and from which such movement takes place.

4. All calves having less than two permanent teeth running within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp or other centres where cases of African Coast Fever have occurred within 15 months of the date of these Regulations, or born thereon after such date, shall be removed to some enclosed place approved of by the local Cattle Inspector, and shall not be liberated or allowed to run at large on such commonage, town lands or common grazing ground until 15 months after the occurrence of the last case of African Coast Fever within the enclosure in which they are confined, or upon such commonage, town lands or common grazing ground.

- (a) No calves shall be permitted to accompany working cattle travelling along the roads mentioned in Section 7, sub-section (c), and all calves born of such working cattle whilst travelling shall not be removed from the place where born.

5. For the purpose of cleansing an area of disease the Controller of Stock may, under the authority of the Administrator and on the advice of the Chief Inspector of Cattle, subject to such conditions as may be stipulated, permit the removal of calves and other cattle to an adjacent clean area.

6. The movement of working cattle other than those specified in Section 7 hereof may be permitted within the following areas and on the terms and conditions hereinafter set forth :—

- (a) Within a maximum radius of 15 miles of any working mine, or mine in course of development, for the purposes of such mine, provided that :—

- (1) Such cattle shall only be moved under permission of a duly authorised Officer, and shall be dipped every 14 days where a dipping tank is available within such area, or, in the absence of a dipping tank, be thoroughly sprayed with an insecticide.
- (2) Such permission shall not be granted where it conflicts with any other section of these regulations, or if such movement is considered to be dangerous to other cattle within the 15 mile radius.

- (b) Within the boundaries of the Gwelo and Lomagundi Native Districts, and within and between the boundaries of the following adjoining Native Districts : (1) Salisbury, North and South Mazoe ; (2) Hartley, Charter and Chilimanzi ; (3) M'tokos, M'rewas, Marandellas and Makoni ; (4) Inyanga, Makoni and Umtali (as defined by Government Notice No. 13 of 1899) ; (5) Along the road West of the Sabi River from Odzi Bridge to Makondo Copper Mine, subject to the following conditions :

- (1) That the movement will be permitted for such period as the Controller of Stock may in his discretion, and on the advice of the Chief Inspector of Cattle, deem expedient, provided that such permission may at any time be withheld or withdrawn without notice.
- (2) That all applications for removal shall be approved of by the Cattle Inspectors of the districts through which the cattle pass.
- (3) Provided that in the event of such Cattle Inspectors refusing to grant permits for the removal of cattle, the Chief Inspector may, on the advice of the local Veterinary Officer, direct the issue, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (4) That all such cattle are dipped every 14 days where a tank is available, or, in the absence of a tank, are thoroughly disinfected by spraying.

7. The movement of "salted" or immune working cattle shall be permitted on the following terms and conditions :—

- (a) That such cattle have been registered and branded under the supervision of the Cattle Inspector with the brand "T.O." on near shoulder and the registration number on near horn, in terms of Section 7, clauses (a) and (b) of Government Notice No. 109 of 1905.

(b) That the movement of such cattle shall only take place under the written permit of a duly authorised officer and subject to the conditions that they are disinfected by dipping every 14 days, where a dipping tank is available, or, in the absence of a dipping tank, by thorough spraying with an insecticide.

(c) That movement of such cattle only shall be permitted :—

- (1) Along the main roads of the Melsetter District.
- (2) From Umtali to the Makondo Copper Fields.
- (3) From Melsetter to Umtali.

8. In the event of failure of pasturage or water on land on which cattle are located the movement of such cattle will be permitted, provided :

- (a) That such movement shall be to the nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 2, clause (b) hereof.
- (c) That such movement shall be by permit only of a duly authorised officer and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector of the district.

9. All applications for the removal of cattle under Sections 2, 3 and 8 hereof shall be submitted to, and approved of by, the local Veterinary Officer before being granted.

10. All permits granted under the provisions of these Regulations shall specify the number and brands of cattle, route to be travelled and period allowed, and may define places of outspan, and all other conditions endorsed on such permits by the officer issuing the same shall be strictly observed.

11. All veldt-fed animals within the limits of the various commonages or town lands, or other centre where there is common grazing ground within the districts of Umtali and Melsetter and the scheduled area at Selukwe, upon which public dipping tanks have been established, shall be dipped therein at least once every 14 days ; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

12. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these regulations in respect of any dipping done at a public dipping tank :—

For Horned Cattle (six months old and over)	..	3d. per head.
For Horses and Mules	.. .. .	3d. „
For Calves (under six months) and Donkeys	..	2d. „
For Small Stock	.. .. .	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under the above tariff.

13. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed : provided that the Inspector may at his discretion carry out such disinfection with the assistance of and at the entire cost of the owner of the animals sprayed, the cost of such disinfecting being payable at the time of spraying.

14. Whenever the owner, occupier, or manager of a farm shall adopt means for cleansing his cattle running thereon, either by spraying or dipping or any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the same farm to cleanse such cattle or any others before permitting them to enter or pass over such an area, and the Native Commissioner of the district in which such farm is situated may enter into an arrangement with the native owners of cattle, to cleanse such cattle at a charge to be mutually agreed upon between the said owner, occupier or manager and the said native owners.

15. Any person contravening the provisions of these regulations shall be liable to the punishments prescribed by the Ordinance, and in cases where no special punishment is prescribed by the said Ordinance to a fine not exceeding £20, or to a period not exceeding three months' imprisonment with or without hard labour in default of payment of any fine inflicted.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 66 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 28th March, 1907.

AFRICAN COAST FEVER.

NOTWITHSTANDING anything to the contrary by regulation provided, I, under and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," hereby provide as follows:—

No cattle shall be allowed to be at large, or moved about for the purposes of work, or other cause, within the area defined hereunder, unless an Inspector shall be satisfied that the said cattle are immune from the disease known as African Coast Fever, and shall have caused such cattle to be branded with the letters "T O" on the near shoulder.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,
Acting Treasurer.

AREA.

From a point on the Tebekwe River one and a half miles North East of the Wanderer Mine in a straight line to the Wanderer Dam, thence in a straight line to the Sebanga Poort, thence along the top of the Eastern slope of the Poort Hills to a point half a mile west of the Paf Mine, thence to the Lundi River in a straight line, thence in a straight line East to the Victoria Road Drift on the Tebekwe River, and thence up the River to the first named point, situate in the Native District of Selukwe.

No. 67 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 19th March, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by Section 5 of the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw that portion of Government Notice No. 94 of 1905 relating to an area set apart for the depasturing and quarantine of slaughter cattle at Selukwe, and declare the undermentioned area to be set apart in lieu thereof:—

A piece of fenced land in extent about 300 acres, situated on the farm Sebanga and adjacent to the Township of Selukwe.

W. H. MILTON, Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON, Treasurer.

No. 114 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 16th April, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw section 9 of Government Notice No. 217 of 1907, and declare the following to be of full force and effect in lieu thereof :—

Notwithstanding anything to the contrary elsewhere provided, all applications for the removal of cattle under sections 2, 6 and 8 of the Regulations published under Government Notice No. 217 of 1907 shall be submitted to, and approved of, by the local Government Veterinary Surgeon or Cattle Inspector before being granted, except in the native districts of Lomagundi, North and South Mazoe, Mrewas, Marondellas, Makoni, Inyanga, Salisbury, Hartley, Charter, and Chilimanzi, within which districts officers duly authorised to issue permits may authorise such removal without submitting the aforesaid applications to, and obtaining the approval of, the local Veterinary Officer.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer

Provisions extended to Native District of M'danga by Government Notice No. 170 of 1908.

No. 207 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 16th July, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 40 of 1908, and amend Government Notice No. 217 of the 10th October, 1907, by extending the provisions of section 6 thereof to the movement of working cattle in the native district of Ndanga and that portion of the Victoria native district lying east of the Popotekwe River and north of the Ndanga road, provided, however, that such movement shall only take place as between occupied farms and for purposes connected with employment at the Umkondo Mine.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 123 of 1908.

Administrator's Office,
Salisbury, 23rd April, 1908.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby provide as follows :—

1. For the purposes of the more effectual control and supervision of cattle in any infected area the Controller of Stock may direct the branding of any such cattle with a special brand by him selected.

2. Any person who shall refuse or neglect to afford all reasonable facilities for branding cattle as aforesaid shall be liable to a fine not exceeding twenty pounds, and in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council,
F. J. NEWTON,
Treasurer.

No. 110 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 16th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal so much of the Regulations published under Government Notice No. 187, dated the 26th of July, 1906, as relate to the importation of cattle from the Colony of the Cape of Good Hope and the United Kingdom of Great Britain and Ireland, and make the following provisions in lieu thereof:—

1. The importation of cattle may be permitted from the Colony of the Cape of Good Hope and the Orange River Colony on the following terms and conditions:—

- (1) A permit shall be required from the Chief Inspector which may contain such conditions as shall from time to time appear expedient.
- (2) Applications for permission to import shall be in the form "A" attached hereto, and accompanied by a declaration in the annexed form "B."
- (3) The importation of cattle with more than two permanent central incisor teeth shall not be permitted.
- (4) All importations shall be by rail, and for the purposes thereof Bulawayo shall be regarded as the port of entry.
- (5) All cattle imported in terms of these Regulations shall on arrival at Bulawayo, Salisbury, or Umtali be removed to a place of quarantine under the supervision of an Inspector of Cattle, there to be submitted to such examination and tests as the Chief Inspector may direct. If such examination or tests disclose the existence of any destructive disease the cattle shall be immediately destroyed and the carcasses thereof disposed of in such manner as a Government veterinary surgeon may authorise or require. The Chief Inspector may permit of any examination or tests as aforesaid being dispensed with in the case of cattle in transit by rail for any place beyond the boundaries of Southern Rhodesia.
- (6) All expenses or losses incident to quarantine, examination, testing or destruction as aforesaid shall be borne by the owner of the cattle.

2. The importation of cattle from the United Kingdom of Great Britain and Ireland may be permitted under the following terms and conditions:—

- (1) Importation shall be through and direct from the coast ports of the Cape Colony, and there shall be a consignment note or other satisfactory evidence that cattle so imported have come direct from Great Britain or Ireland.
- (2) The provisions of sub-sections (5) and (6) of section 1 hereof shall apply to importations in terms of this section.

3. No person shall import cattle in terms of these Regulations except for his own use, provided however that permission may be granted to import for others on the applicant disclosing the name of the person or persons for whom he proposes to act.

4. Any person introducing cattle in contravention of these Regulations, or failing to comply with any conditions attached to permits to import, or furnishing applications, declarations, or other necessary documents known to be false in any material particular, or failing to comply with all lawful directions as to quarantine, examination, testing, destruction or disposal of carcasses, shall be liable to a fine not exceeding £20 for each animal in respect of which such offence shall have been committed, and in default of payment to imprisonment with or without hard labour for any period not exceeding six months, unless higher or greater penalties shall have been provided for such offences by the "Animals Diseases Consolidation Ordinance, 1904," provided however that the penalties imposed by these Regulations shall not exempt any cattle from destruction in terms of the aforesaid Ordinance.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

ANNEXURE "A."

APPLICATION FOR CATTLE IMPORTATION PERMIT.

GOVERNMENT NOTICE NO. 110 OF 1908, SECTION I (2).

1. Applicant's Name and Address.....
 2. Number and Class of Cattle to be imported.....
 3. Area or Farm and District where Cattle are at present located.....
 4. Area or Farm and District to which Cattle are to be moved.....
- Applicant's Signature.....
- Date
- Application
- Permit No.

ANNEXURE "B."

I,.....residing on the farm
in.....do solemnly and sincerely declare that the animals
enumerated below have been in my possession since birth, and that lung-
sickness, pleuro-pneumonia or any other contagious or infectious disease has
not existed amongst any of my cattle or on my farm within the last four years,
and that to the best of my knowledge and belief such cattle in travelling
to.....* station will not come in contact with any
animals amongst which lungsickness or any other contagious or infectious
disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to
be true.

Declared to at.....on this.....day
of.....before me....., Resident Magistrate
for the District of

Number of Animals.....Bulls.....Heifers.....

Breed.....

Seller's Name and Address.....

Purchaser's Name.....

Place in Southern Rhodesia to which animals are being sent.....

* Station within the Colony of origin.

No. 124 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 30th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare and make known that notwithstanding anything to the contrary elsewhere provided, the importation of cattle for *bona-fide* slaughter purposes may be permitted into the Umtali district from the adjoining Portuguese Territory under the following terms and conditions :—

1. The importation and disposal of cattle introduced in terms of these regulations shall be under the absolute control and direction of the local veterinary surgeon or other duly appointed officer, and shall be regulated by the requirements of consumption.

2. The importation shall be limited to a fenced enclosure approved of by the Controller of Stock, which shall be situated on the Rhodesian side of the Anglo-Portuguese frontier line where it passes through the farm "Birkley."

3. Cattle introduced as aforesaid shall be immediately slaughtered, and no meat thereof shall be removed without special permission unless it is entirely free from skin and ears.

4. The hides of animals slaughtered in the said enclosures shall be immediately immersed in an approved insecticide for a period of not less than twelve hours, and shall not be removed from the said enclosure unless accompanied by a certificate signed by a veterinary surgeon that they have been satisfactorily disinfected and dried.

5. Any person contravening the provisions of these regulations, or the instructions or directions of the local veterinary surgeon or other duly authorised official, given in terms of these regulations, shall be liable, in respect of each offence, to a penalty not exceeding £20, or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding three months, unless where more severe or heavier penalties have, by the aforesaid Ordinance, been expressly provided.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 152 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 21st May, 1908.

IMPORTATION OF CATTLE FROM NORTH-EASTERN AND NORTH-WESTERN RHODESIA.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel sections 4, 5, and 6 of Government Notice No. 187 of 1906, and declare the following to be in force in lieu thereof :—

1. Cattle may be imported from North-Eastern Rhodesia, provided that :—

- (a) The permission of the Chief Inspector of Cattle be first had and obtained.
- (b) All cattle be introduced by way of the port or town of Feira, which is hereby declared a Port of Entry for cattle, and taken to Sipolilo.
- (c) All cattle shall remain in quarantine at Sipolilo for a period of six weeks from date of arrival.

2. Slaughter cattle may be imported from North-Western Rhodesia, provided that :—
 - (a) The permission of the Chief Inspector of Cattle or of a Government Veterinary Surgeon be first had and obtained.
 - (b) All such cattle shall be conveyed by rail *via* the Victoria Falls, which is hereby declared a Port of Entry for cattle, and be carried to the station or siding nearest to the centre of consumption.
 - (c) On arrival at their destination such cattle shall be subject to the regulations controlling the movement and disposal of slaughter cattle.
3. Cattle for general purposes may be imported from North-Western Rhodesia, provided that :—
 - (a) Such importations shall take place between the 1st April and the 30th September in each year.
 - (b) The permission of the Chief Inspector be first had and obtained.
 - (c) All cattle imported shall be introduced by rail only and *via* the Victoria Falls, and shall be branded before entry with the letters "N.Z." on the near shoulder.
 - (d) All cattle shall on entry be taken to a prescribed area to the north of the Gwaai River, where they shall remain in quarantine for a period of six weeks from the date of their arrival.
 - (e) No cattle shall be removed from the quarantine area until examined by a Government Veterinary Surgeon.
 - (f) All cattle removed from the quarantine area as aforesaid shall be taken direct to their destination and shall not be moved therefrom for a period of twelve months from the date of arrival thereat.

4. Every application for permission to introduce cattle under sections 1 and 3 shall be accompanied by a certificate in the form of Annexure "A" attached to this Notice.

5. Any person found introducing cattle from North-Eastern or North-Western Rhodesia otherwise than in accordance with these regulations or submitting any certificate false in any material particular or refusing or neglecting to submit cattle introduced to proper inspections and tests, or failing to quarantine properly such cattle when introduced, shall be liable to a fine not exceeding £10 for every animal in connection with which the offence complained of is committed, and in default of payment of any fine inflicted to imprisonment with or without hard labour for any period not exceeding three months, and the cattle in regard to which the complaint has been laid and proved may, under the written direction of the Administrator, be destroyed without compensation.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,
For Treasurer.

ANNEXURE "A."

I,....., residing on the farm..... in the district of..... in the Territory of North-Eastern or North-Western Rhodesia (as the case may be), do solemnly and sincerely declare that the animals enumerated below have been in my possession for twelve months, or that I purchased them from....., residing in the district of....., in the Territory of North-Eastern or North-Western Rhodesia, on the day of..... (as the facts permit), and that no case of lung-sickness or other contagious disease has existed amongst any of my cattle or on my farm or other cattle with which they have been in contact within the last two years, and that, to the best of my knowledge and belief, such cattle, in travelling to Feira (or Victoria Falls), will not come in contact with any animals amongst which lung sickness or other contagious disease has existed during that period.

No. 244 of 1908.

Administrator's Office,

Salisbury, 20th August, 1908.

THE subjoined Proclamation by the Governor of German South-West Africa, prohibiting the importation into that territory of large cattle and grass-hay from Rhodesia, the Bechuanaland Protectorate and Angola, is hereby published for general information.

By command of His Honour the Administrator.

H. MARSHALL HOLE,

Secretary, Department of Administrator.

PROCLAMATION.

Proclamation of the Imperial Governor of German South-West Africa concerning the prohibition of the importation of cattle, etc., from Rhodesia, the British Bechuanaland Protectorate and Angola, dated the 23rd of June, 1908.

Acting on the authority of section 15 of the law relating to Protectorates, etc. (*Imperial Law Gazette*, 1900, p. 13), and section 5 of the regulations issued by the Imperial Chancellor concerning the powers of the authorities of the Protectorates in Africa and the South Sea and their right to issue orders by Proclamation referring to naval and consular matters, dated the 27th September, 1903 (*Colonial Gazette*, p. 509),

It is herewith proclaimed and ordered for the South-West African Protectorate as follows:—

Section 1.—The importation of large cattle of every kind—namely, bulls, oxen, cows, heifers and calves—as well as of horns, hoofs and skins thereof, and further, the importation of grass-hay from Rhodesia, the British Bechuanaland Protectorate and Angola is prohibited.

Section 2.—Whoever contravenes this order shall be punishable by a fine not exceeding 10,000 M., or by imprisonment not exceeding three months, or by a fine and imprisonment combined. The objects or articles concerned in the contravention of this Proclamation shall be subject to confiscation.

Section 3.—This Proclamation is in force from the date of its publication.

The Imperial Governor,

(Sgd.) VON SCHUCKMANN.

Windhuk, 23rd June, 1908.

No. 248 of 1908.

Department of Agriculture,

Salisbury, 27th August, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise the importation from the United States of America of cattle required for bona-fide breeding purposes, provided, however, that such importation shall be subject to the provisions of Government Notice No. 110 of the 16th April, 1908, relating to the importation of cattle from the United Kingdom of Great Britain and Ireland.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 268 of 1907.

Department of Agriculture,
The Treasury,
Salisbury, 26th December, 1907.

REMOVAL OF CATTLE FOR SALE.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The assembly of cattle for purposes of sale by auction or otherwise may be permitted at such places and under such conditions as the Chief Inspector may from time to time prescribe.
2. The movement of cattle into the province of Mashonaland and the fiscal division of Gwelo from other places in Southern Rhodesia may be permitted under such conditions as the Chief Inspector may from time to time prescribe.
3. The granting of permits for the purposes of Sections 1 and 2 hereof and the nature of the conditions to be attached thereto shall be at the absolute discretion of the Chief Inspector.
4. Any person contravening the provisions of these Regulations or the conditions attached to permits issued thereunder shall be liable to a fine not exceeding £20 or in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,
Administrator.

| By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 42 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 28th February, 1907.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare and make known that, on and after the 15th day of March, 1907, all and singular the Government Notices regarding the disease of Rabies now subsisting and in force in this Territory are hereby cancelled and repealed, except as to acts done or penalties incurred at the date of the coming into force of this Notice, and except as to officers appointed under Government Notice No. 286 of 1906, whose appointments shall remain valid for the purposes of this Notice, and in lieu thereof the following regulations shall have full force and effect:—

1. All and several the various Native Districts of Southern Rhodesia are hereby declared to be areas infected with the disease of Rabies.
2. Subject to any penalty a dog owner may have incurred under Government Notice No. 285 of 1906 by not registering his dog before the 1st day of February, 1907, the owner of any unregistered dog liable to registration may register the same at any time after the said date.
3. On and after the date of this Notice becoming operative the owner of every dog arriving at the age of three months, and the owner of every dog imported into Southern Rhodesia after that date shall register such dog with an official appointed for the purpose, provided that this provision shall not apply to any Municipality, Township or similar area in which provision for registration exists and is duly enforced.

4. A registration badge shall be issued for each and every dog registered, and the said badge must be attached to a proper and sufficient collar to be supplied by the owner, which must be placed and kept on each dog registered.

5. A fee to cover the cost of registration and supply of the badge in the amount of sixpence will become demandable and payable on registration of each dog.

6. Any dog found at large after the date of this Notice becoming operative, not having and bearing a registration badge duly issued by an official or the local authority, may be summarily destroyed by any person.

7. Every dog shall be kept muzzled with a standard wire muzzle made according to the pattern lodged with each Magistrate and Assistant Magistrate, and open to inspection on application to him, or with a muzzle sufficient to prevent its biting or injuring any person or other animal with its teeth, or shall be secured in an enclosure or by chain in such a manner that it shall not have access to persons or animals nor other animals access to it.

8. Every dog found at large after the 15th day of March, 1907, not being sufficiently muzzled, may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty hereinafter prescribed.

9. Any Magistrate, Police Officer, Native Commissioner, Government Veterinary Surgeon or other official vested with the performance of functions under the Animals Diseases Consolidation Ordinance, 1904," may, on it appearing to him that any dog or other animal is showing symptoms which justify investigation as to whether such dog or animal is suffering from rabies or not, order the proper detention, isolation and control of such dog or animal either in the hands of the owner or at some other suitable place.

10. Should any dog show symptoms which lead to the suspicion that such dog may be suffering from rabies, the owner thereof shall forthwith notify the fact to the nearest official vested with powers under these regulations, who shall immediately report same to the Chief Veterinary Surgeon, and shall either destroy the said dog or isolate and secure it for further observation.

11. On its appearing that any animal is actually suffering from rabies, any of the above-mentioned officials may order the destruction of such animal, or may himself destroy it and may further take control of or destroy, if deemed necessary, any animal which has been in contact with a rabid animal or an animal suspected of being rabid.

12. The carcasses of all animals destroyed on account of their being infected with rabies shall be thoroughly burnt by the person or official destroying them, save that such parts as may be required for scientific investigation may be retained under proper precautions. In any case in which a human being has been bitten by a rabid animal, the head of such animal shall, if possible, be taken and sent to the nearest Veterinary Official.

13. Any person contravening any of the above regulations or failing to carry out any of the provisions thereof shall be liable on conviction to a fine not exceeding £10 for each offence or in default of payment to imprisonment with or without hard labour for a period not exceeding one month.

No. 156 of 1907.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare and make known that on and after 15th August, 1907, Sections 7 and 8 of Government Notice No. 42 of 1907 are repealed and the following new Sections substituted:—

7. Every dog shall be kept muzzled with a standard wire muzzle made according to the patterns lodged with each Magistrate and Assistant Magistrate, and open to inspection on application to him, or shall be secured in an enclosure or by chain in such a manner that it shall not have access to persons or animals nor other animals access to it.

8. Every dog found at large after the 15th day of August, 1907, not being muzzled with a standard wire muzzle may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty prescribed in the aforesaid Government Notice.

No. 228 of 1907.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare and make known that on and after the 1st November, 1907, the following regulation shall have full force and effect in addition and supplementary to the Regulations proclaimed by me under Government Notice No. 42 of 28th February, 1907.

14. Notwithstanding the provisions of Section 7, the following classes of dogs shall be allowed to go unmuzzled subject to the conditions respectively set forth in each class.
 - a. Pointers, Setters, Spaniels, and all such sporting dogs, when being *bona fide* used and at work before the gun, and under the ordinary supervision and control of persons in charge of them, carrying guns for the shooting of game.
 - b. Packs of Foxhounds, Harriers or Beagles, duly registered as such before the Resident Magistrate of the District in which their owner or owners reside, when under the ordinary supervision and control of not less than two persons engaged in the chase.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator.

F. J. NEWTON,
Treasurer.

No. 129 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 7th May, 1908.

RABIES.

WHEREAS it has been shown to me that it is expedient to take measures to prevent the spread of rabies in the undermentioned district, Now Therefore, under and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise and direct that all dogs at the kraals to the natives Chiduku and Maveja, and all dogs within a radius of ten miles of such kraals in the native district of Makoni, shall be destroyed by shooting, poisoning or other approved methods, and that the carcases of all dogs shall be burnt or buried at a depth of not less than three feet below the surface.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,
For Treasurer.

No. 178 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 18th June, 1908.

RABIES.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I hereby declare and make known that the provisions of Government Notice No. 42 of 1907, relating to the muzzling of dogs shall not apply to the following areas:—

The Towns and Commonages of Salisbury, Bulawayo, Umtali, Gwelo, Victoria, Selukwe, Gwanda, Hartley, Enkeldoorn and Melsetter.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 215 of 1908.

Department of Agriculture,
 Administrator's Office,
 Salisury, 23rd July, 1908.

RABIES.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the provisions of Government Notice No. 178 of 1908 in so far as they relate to the town and commonage of Gwelo, and declare that the provisions of Government Notice No. 42 of 1907 regarding the muzzling of dogs shall apply to the said town and commonage.

W. H. MILTON,
 Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
 Treasurer.

No. 133 of 1908.

Department of Agriculture,
 Administrator's Office,
 Salisbury, 7th May, 1908.

IMPORTATION OF PLANTS, ETC., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulation Ordinance, 1904," I do hereby cancel Government Notice No. 211 of 1907 and declare the following to be of full force and effect in lieu thereof :—

1. Until further notice no person shall introduce into this Colony any grape vine, Virginia creeper, or other plant of the family *vitacæa* or any fruit or other portion thereof, from any of the following districts of Cape Colony :—

Aberdeen	Albany.	Alexandra.
Bathurst	Bedford.	Cradock.
Cathcart.	East London.	Fort Beaufort.
Graaff-Reinet.	Glen Grey.	Humansdorp.
Jansenville.	King William's Town.	Port Elizabeth.
Komgha.	Middelburg.	Somerset East.
Peddie.	Queenstown.	Tarka.
Stockenströöm.	Stutterheim.	
Uitenhage.	Victoria East.	

This regulation shall not, however, apply to grape jam, wine, brandy, vinegar or must.

2. If at any time an inspector shall find any grape vine, Virginia creeper or other plant of the family *vitacæa*, or any fruit or other portion thereof introduced into this territory in contravention of this regulation, he shall order the same to be immediately removed from the territory, or the Secretary for Agriculture may order the same to be destroyed without delay.

W. H. MILTON,
 Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
 Treasurer.

No. 197 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 2nd July, 1908.

IMPORTATION OF PLANTS, ETC., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulation Ordinance, 1904," I do hereby provide that the Regulations published under Government Notice No. 133 of the 7th May, 1908, shall not apply to the importation of raisins.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 221 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 30th July, 1908.

IMPORTATION OF PLANTS, ETC., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulations Ordinance, 1904," I do hereby cancel and withdraw the prohibition contained in Government Notice No. 236 of the 21st November last against the importation of any tree, shrub or vegetable and the fruit, leaves, cuttings, bark or any part thereof from the Orange River Colony.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 249 of 1908.

The Treasury,

Salisbury, 27th August, 1908.

IT is hereby notified for public information that any person who shall cut down for use as fuel, or for any other purposes than *bona-fide* farming, mining or manufacturing purposes, or cause to be so cut down the "Wild Westeria" (native name M'Pakwa or M'poea) tree, will be liable to prosecution for contravention of the provisions of the Forest and Herbage Preservation Act 1859, and upon conviction to a fine not exceeding £100, or to imprisonment with or without hard labour for a term not exceeding six months, or to such fine and imprisonment, or to such imprisonment without a fine.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator,

F. J. NEWTON,
Treasurer.

SUMMARY OF "THE GAME LAW CONSOLIDATION ORDINANCE, 1906," AND REGULATIONS ISSUED THEREUNDER.

The Ordinance divides the game into three distinct classes, described as follows :—

- (a) Birds and Small Buck.
- (b) Bushbuck, Hartbeest, Impala, Lechwe, Pookoo, Roan and Sable Antelope, Sitatunga, Tasessibe, Waterbuck and Wildebeest.
- (c) Royal Game, which includes Eland, Elephant, Giraffe, Gemsbok, Hippopotamus, Inyala, Koodoo, Ostrich, Rhinoceros, Springbuck and Zebra.

The shooting season for Class "A" is as follows :—

In Mashonaland :

Birds from 1st May to 30th September.

Small Buck from 1st May to 31st October.

In Matabeleland :

Birds and Small Buck from 1st May to 31st October.

To shoot in Class "A" a licence costing £1 per annum is required. This entitles holders to hunt in both Provinces during the open season.

Class "B."—The season opens on 1st July and closes on 30th November in both Provinces. The licence fee is £25 for non-residents and £5 for persons having their domicile in Southern Rhodesia. This licence entitles the holder to shoot up to 15 head, which number may be increased to a total of 25 upon payment of a further sum of £15 in the one case and £5 in the other.

Class "C."—The Administrator may, if he is satisfied that the animals are actually required for scientific purposes, grant to the holder of a game licence permission to shoot or capture any of the species included in this Class. Such permit requires a £5 stamp. Applications in writing, together with proof of *bona-fides*, should be addressed to the Secretary for Agriculture.

Game for Farming Purposes.—Permits are granted for the capture of Eland, Ostrich, Zebra or other animals for the purposes of breeding or farming. Such permits require a stamp of the value of £1 and remain in force for six months. Application, accompanied by a sworn declaration, should be made through the Secretary for Agriculture or the Civil Commissioner of the district.

Game Injuring Crops.—The occupier of any cultivated land or any person acting under the authority of such occupier, may at any time destroy game actually doing damage in such land.

Open Areas.—All game in Classes "B" and "C," excepting Ostrich, Elephant, Hippopotamus and Rhinoceros, may be destroyed at any time in certain defined portions of the Hartley and Lomagundi Districts, and also within a radius of twenty miles of the Native Commissioner's Office in the Sebungwe District, without payment of any licence fee. The areas will be found more fully described in Government Notices Nos. 237 of 1906, 82 and 143 of 1907. The destruction of game in these localities was rendered necessary through the spread of Tsetse Fly.

Elephants when found on occupied farms on the High Veld in the Melssetter District may be destroyed, *vide* Government Notice No. of 1908.

Game in Class "A" may be hunted in the close season ending 30th April, 1909, on private land in the Melssetter District by holders of a licence.

Protected Areas.—No game may be hunted or killed within the limits of the Commonages or Townlands of Salisbury, Bulawayo, Umtali and Melssetter; within a radius of two miles of the Court House, Gwelo, or within the Urungwe Game Sanctuary, as defined by Government Notice No. 237 of 1906.

'Locust Birds' are strictly protected, *vide* Government Notice No. 121 of 1907.

No. 9 of 1907.

NORTH-WESTERN RHODESIA.

WHEREAS there is reason to believe that certain diseases in cattle exist in the Territory of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, and it is therefore expedient to take measures to prevent the spread of such diseases to North-Western Rhodesia.

Now, therefore, under and by virtue of the powers in me vested by Section 2 of His Excellency the High Commissioner's Proclamation, No. 18 of 1906, bearing date the 31st day of July, 1906, I do hereby order and declare and make known as follows:—

1. That Government Notices, No. 2 of 1902, and No. 11 of 1906, are hereby withdrawn, and the following Regulations substituted:
2. The introduction of any bull, ox, cow, heifer or calf or the meat of any such animals, into the Territory of North-Western Rhodesia from the Territories of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, is prohibited until further notice.
3. No person shall introduce into the Territory of North-Western Rhodesia from the Territories aforesaid, any horse, mare, gelding, mule, donkey, sheep, goat or pig, horns or skins, or any kind of vehicle, wagon gear, trek gear, or harness, without having first obtained the special permission in writing of a District Commissioner, Civil Commissioner, or other person thereto authorized by me; and such animals, horses, skins, vehicles, gear, or harness, shall enter the Territory of North-Western Rhodesia at such place, and under such conditions as regards quarantine and disinfection, as shall be ordered by the person issuing such written permission as is above described.
4. Whenever any conditions as to quarantine, isolation, disinfection or otherwise, are imposed, such conditions shall be fulfilled at the sole risk and expense of the owner, consignee, or other person concerned.
5. All live stock imported into the Territory by rail by way of Victoria Falls and Livingstone, shall be inspected at Livingstone Station, and, whenever disinfection is ordered, shall be disinfected at that Station.
6. In the case of live stock consigned to any point on the railway line north of Livingstone Station, the officer authorized to issue the written permission aforesaid shall further order the disinfection of the truck or horse-box in which such stock is being conveyed. Such disinfection shall be carried out at the expense of the owner or consignee of the stock, or other person concerned therein.
7. Consignors and importers of live stock shall give not less than seven days' notice of the arrival of such stock at Livingstone Station. Such notice shall be given to the Civil Commissioner, Livingstone, or to such other official as may hereafter be appointed.

ROBERT CODRINGTON,

Administrator.

By command of His Honour the Administrator,

HENRY RANGELEY,

Acting Secretary.

Administrator's Office,
Livingstone, North-Western Rhodesia,
30th September, 1907.

Departmental Notices.

DESTRUCTION OF WILD CARNIVORA, ETC.

It is hereby notified for public information that the Notice issued by this Department, dated 8th June, 1906, offering certain rewards for the destruction of wild carnivora, etc., will, *after 31st March, 1908*, cease and determine, and thereafter rewards will be paid only on the scale and conditions herein set forth.

2. Rewards will be paid as follows:—

For each Lion	£3	0	0
„ Leopard	1	0	0
„ Cheetah	1	0	0
„ Wild Dog	0	10	0
„ Crocodile, of not less than 3 ft. in length ...	0	10	0

3. Rewards will be paid to Europeans by the Magistrate or Native Commissioner, and to natives by the Native Commissioner of the district, within three months of the date upon which the animal is killed, on a declaration made in the form of the annexure hereto.

4. In proof of destruction, applicants for rewards will be required to produce and surrender, in the case of Lion, Leopard or Cheetah, the skin with the tail not severed, and in the case of Crocodile or Wild Dog, the unskinned head.

5. The skins and heads of animals for which rewards have been paid shall be the property of the Government, and shall be disposed of in such manner as may be decided on.

E. ROSS TOWNSEND,
Secretary for Agriculture.

FARM APPRENTICES.

The Secretary for Agriculture would be glad to receive the names of farmers willing to take students from overseas for instruction in South African farming.

He also wishes to make it known that a large number of young Colonials with experience are anxious to obtain situations on farms in Rhodesia. Farmers are now invited to state on what terms they would offer to take these—sending in the full particulars to this Department as early as possible.

STRYCHNINE.

Stockowners can obtain a limited quantity of strychnine for the destruction of carnivora at a cost of 4s. 6d. per ounce.

GOVERNMENT STALLIONS FOR PUBLIC STUD.

The stallion "Dolfos" is stationed at Bulawayo, where applications, giving full particulars of mares to be served, should be addressed to the Government Veterinary Officer, Bulawayo.

The stallion "Robber Knight" is stationed at Enkeldoorn until November, where arrangements for service of mares are to be made with the C.O., B.S.A. Police, Enkeldoorn. The stallion will then return to Salisbury, where he will remain at stud until further notice.

The owners of mares brought to stud will have to make all necessary arrangements for attendance, stabling and feeding of their animals, as the Department can take no responsibility whatever.

Pedigree.—"Robber Knight" by "Sir Hugo," ex "Fritters" by "St. Simon."

VAPORITE.

The new preparation, "Vaporite," suitable for the destruction of cut-worms, wire-worms, white ants, and other soil-infesting pests, can be obtained from the Department in quantities of not less than 2 cwt. at 17s. 6d. per cwt. Application to be accompanied by remittance covering cost and transport charges.

TOBACCO SEED.

The following varieties of tobacco seed may now be obtained by planters from this Department at the prices named, which include postage. Orders must be accompanied by remittance.

	per oz.	
	s.	d.
Turkish, Yenedje, Xanthi, Aya Solouk	1	6
Turkish, Cavalla	1	6
Goldfinder (a bright Virginia leaf, when flue-cured, brighter than Hester)	1	2
Hester (a bright Virginia, suitable for sandy soils)	1	0

TOBACCO SEED BED COVERING.

A large supply of calico for covering tobacco seed is now available. It can be obtained from the Anglo African Trading Company at Salisbury, Bulawayo, and Gwelo. Price $2\frac{1}{2}$ d. per square yard.

CULTURE OF TOBACCO.

This book, by G. M. Odlum, containing the History of the Tobacco Plant from seed to manufacture, can be obtained from this Department. Price 2s., post free 2s. 4d.

PRIZE COMPETITION FOR RHODESIAN
GROWN TOBACCO LEAF.

The following prizes are offered by the British South Africa Company to be awarded for the best crops of tobacco leaf grown during the season 1907-8.

1. For Rhodesian grown leaf from Turkish seed.
 - (a) Best crop weighing between one thousand and five thousand pounds: £25
 - (b) Best crop weighing five thousand pounds and over: £75.
2. For Rhodesian grown leaf from American seed and flue cured.
 - (a) Best crop weighing between one thousand and five thousand pounds: £25.
 - (b) Best crop weighing five thousand pounds and over: £75.

CONDITIONS OF COMPETITION.

1. All competing crops must be cured, dried, packed in bales and delivered for sale at one of the Company's warehouses in Rhodesia.
2. Picked or selected exhibits representing but a portion of a crop cannot enter for competition.

3. Any or all competing crops may be disqualified by the Judges, if in their opinion they are not properly packed or in keeping condition.

4. Two Judges, both expert tobacco leaf men, will be appointed, one to be nominated by the British South Africa Company, and the other by the Rhodesian Agricultural Union. If necessary, an Umpire may be nominated by the Judges.

5. No competitor shall enter for both prizes in the same class.

6. All competing crops shall be the product of the season in which they are entered for competition.

7. Crops can be lodged at one of the Company's warehouses at Salisbury or Bulawayo any time during the season up to the end of December, but notice of intention to enter for competition should be sent to the Agricultural Department at as early a date as possible, and not later than 31st August.

IMPORTED MAIZE SEED.

During his visit to America, Mr. Odlum made a selection of a quantity of pedigree maize seed for the Rhodesian Government. The varieties are Boone County and Gold Standard Leman.

This seed may now be obtained from the Agricultural Department at 3½d. per lb. free on rail at Salisbury; remittance to accompany order.

INSTRUCTIONS FOR TAKING SAMPLES OF SOIL FOR ANALYSIS.

In taking samples of soil for analysis, it is important that they should be of a truly representative character; and, when sending them in to the Department, it should be stated for what purpose it is intended to use the land, whether for cereals, tobacco, lucerne, fruit-growing, etc. If much difference exists in the area to which the analysis is intended to refer, a separate sample of each of the different soils should be forwarded.

Samples should be taken as follows:—

Dig several holes 3 feet deep, the number varying according to the size of the land, care being taken to avoid tree roots, and hills, or any spots marked by rank vegetation or the absence of vegetation. Select the hole showing the most representative character, and from the side of it cut a section with a knife or trowel, about 2 inches square and 10 inches deep, first clearing off the top vegetation. Place this section in a bag by itself (No. 1), then take another section below the first, about 14 inches deep, and put in a separate bag (No. 2); below the second section take a third, about 12 inches deep, and place in a third bag (No. 3). If rock is encountered before this section can be cut, send a sample of the rock, about 1 lb. weight.

When the sample is of cultivated land, the top section should be taken from each of the holes made and thoroughly mixed, and about 4 lbs. of the mixture sent for analysis; 2 or 3 lbs. each of the other sections, taken at the depths mentioned above, from one hole only, is sufficient. When forwarding the samples, as much information as possible should accompany them; such as, whether the situation is near a river, if from sloping or level ground, the behaviour of the land under much rain or severe drought, if it yields good crops or poor, if kraal or other manures have been applied recently and in what quantities.

Samples should be addressed to: The Secretary for Agriculture, Agricultural Department, Salisbury, and accompanied in all cases with full particulars as set forth above. No attention will be paid to samples sent without full details.

Schedule of Charges made for Analysis in the Agricultural Laboratory, Salisbury.

	£	s.	d.
1. Estimation of two or three constituents in mineral or other manures	0	15	0
2. Analysis of water for stock or irrigation purposes	1	0	0

	£	s.	d.
3. Estimation of Lime or Phosphoric Acid in rock specimens	0	15	0
4. Partial analysis of soil—Mechanical an- alysis and determination of one or two constituents	2	0	0
5. Complete analysis of soil	3	0	0

At present no charge will be made to *bona fide* farmers. The charges in the above schedule are for products sent in by merchants, dealers, and others interested in trade. The Analyst will exercise his discretion as to the examination of all samples, whether they are of sufficient importance for determination.

The right of publishing the result of any analysis is reserved by the Department.

EXPORT OF SOUTH AFRICAN HAY TO GREAT BRITAIN.

The following wire has been received by His Honour the Administrator from His Excellency the High Commissioner relating to the export of hay from South Africa:

“Johannesburg, April 27th, 1908.

“I have received notification from the Secretary of State for the Colonies that, owing to risk of spread to farm stock in Great Britain of disease known as African Coast Fever through the medium of hay from South Africa, Board of Agriculture are taking steps under Diseases of Animals' Acts, 1894 to 1903, to prevent its importation unless and until they are satisfied that disease has been eradicated from South Africa.

“You should accordingly warn intending shippers that His Majesty's Government will probably take steps to prevent such hay being landed in Great Britain. The Board of Agriculture notifies that its interpretation of the term ‘Hay’ includes all dried fodder plants that have not had their seeds removed, and that term as used in this correspondence is intended to cover oat hay, vetch hay, lucerne hay (Alfalfa), as well as ordinary grass and clover hay.”

Editorial Notices.

Original subscribers to the *Journal*, who have complete sets of the earlier numbers to dispose of, are requested to communicate with this office, as numerous enquiries for the first and second volumes, now out of print, have been received.

Subscriptions to the *Journal* (5s.), issued bi-monthly, should be addressed to the paymaster, Agricultural Department, Salisbury. Only communications relating to the literary department should be addressed to the Editor, and if an answer is required in the pages of the *Journal*, should reach this office not later than the 15th of the month preceding publication. Charges for the insertion of advertisements will be forwarded upon application to the paymaster. Subscribers are requested to notify immediately the non-delivery of the *Journal*.

Farmers requiring latest market prices for produce and live stock at Kimberley, Johannesburg, Bulawayo, Gwelo, Salisbury, Umtali, and Beira, can obtain same from this office by next mail or prepaid wire.

Advertisements will be accepted from *bona fide* farmers wishing to effect sale, purchase or exchange of produce, live stock, or farm implements, at a minimum charge of 2s. 6d. per insertion of 20 words. Extra words will be charged for at the rate of 1s. for every ten words.

Applications for Advertisement Rates to be made to J. Kapnek, Sole Advertisement Contractor for "Rhodesian Agricultural Journal," P.O. Box 91, Salisbury and Box 45 Bulawayo.

ADVERTISEMENTS.

Farmer's Advertisements.

PERSIAN Ram Lambs for sale, from pure bred stock imported from Cape Colony. Apply H. E. Light, c/o. Meikle Bros., Salisbury.

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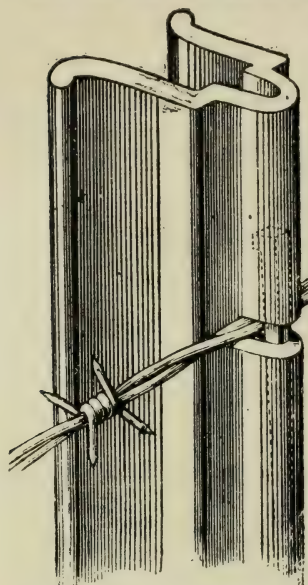
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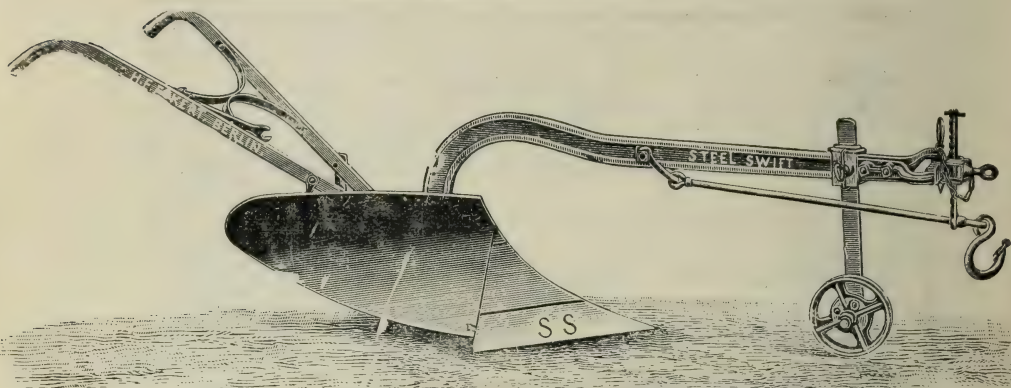
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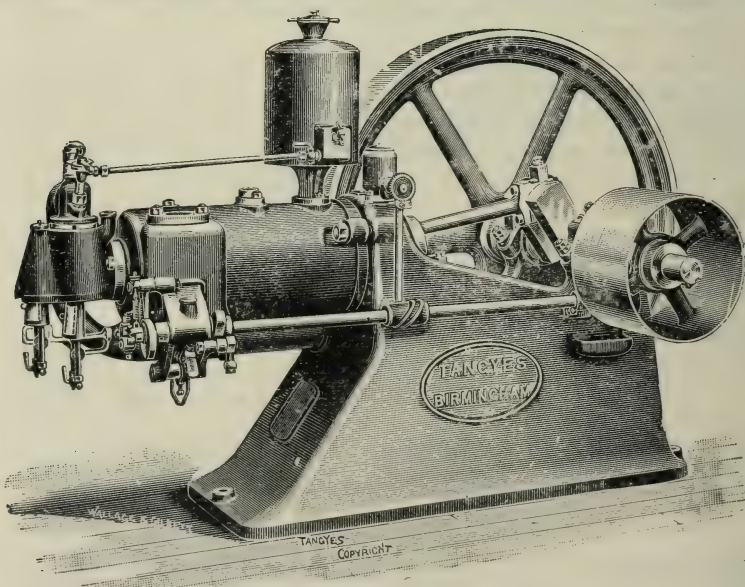
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Issued by the Agricultural Department.

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VOL. VI.—No. 4.]

APRIL, 1909.

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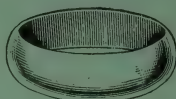
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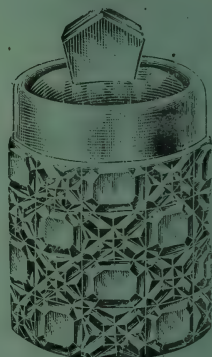
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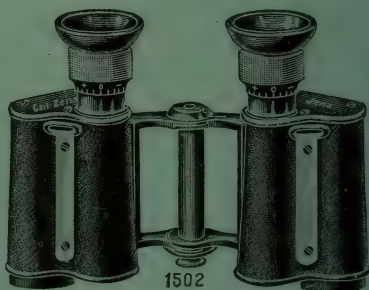
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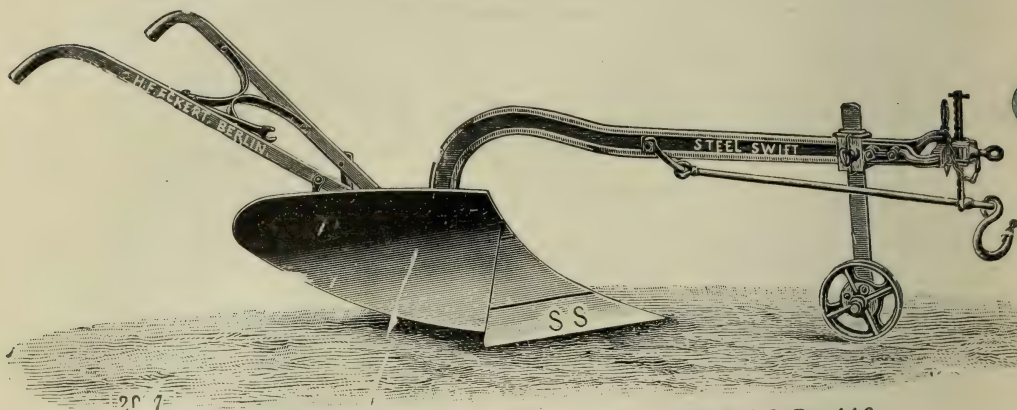
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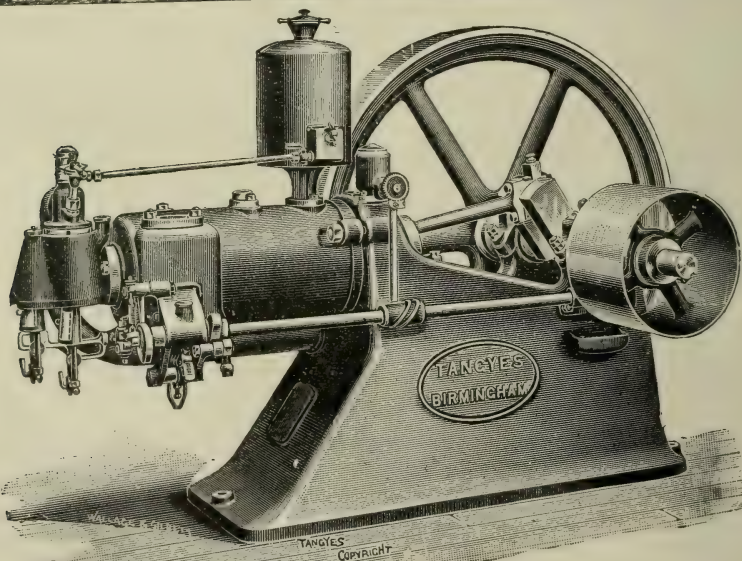
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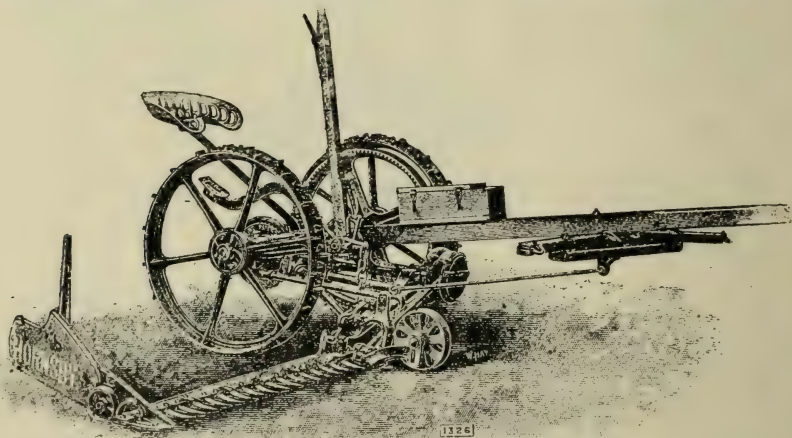
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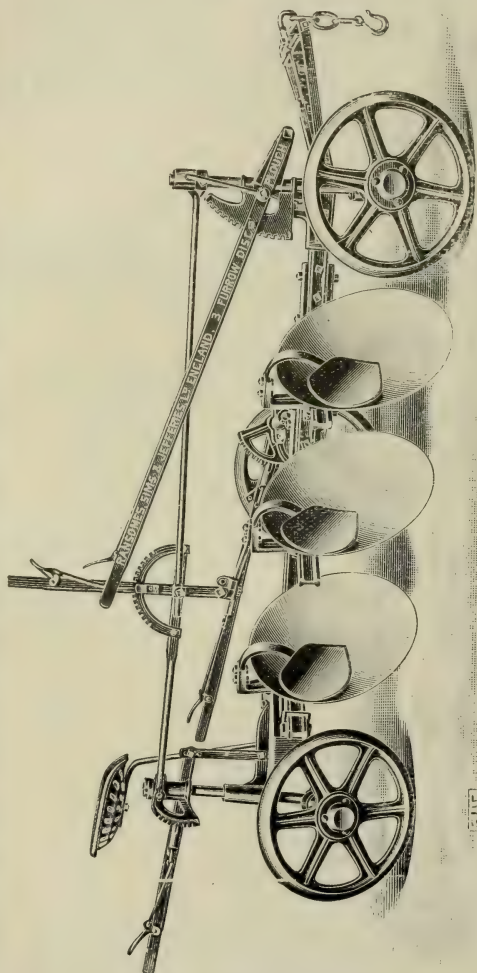
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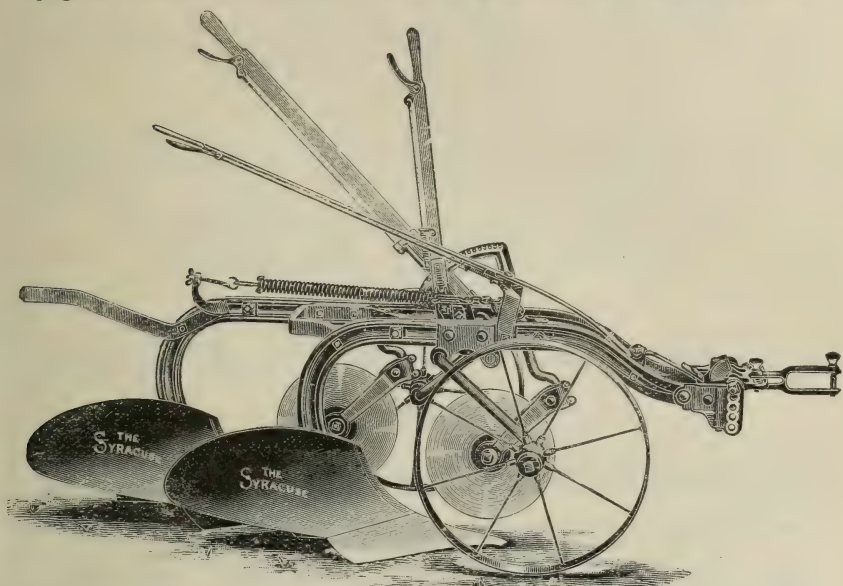
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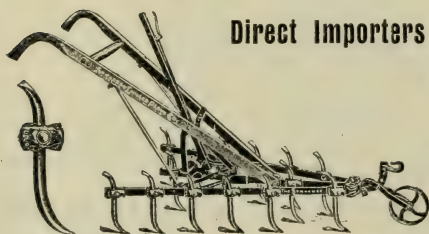
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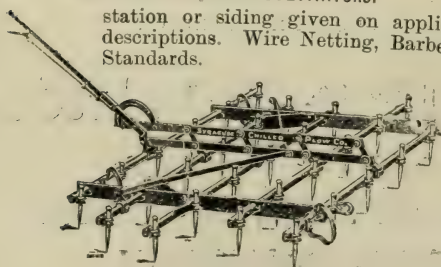
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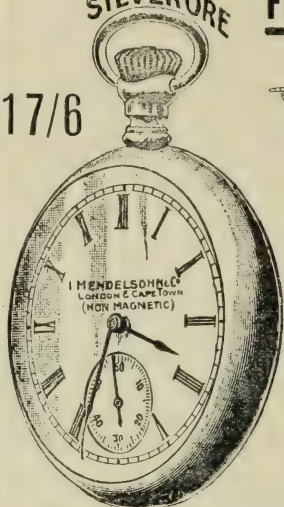
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THE RHODESIAN AGRICULTURAL JOURNAL

Issued by the Agricultural Department.

EDITED BY J. CAMERON.

VOL. VI.—No. 4.]

APRIL, 1909.

[5s. per annum.

Editorial.

The harvest prospects in Southern Rhodesia are of the most hopeful kind, the maize crop giving a most abundant yield in nearly every district of Matabeleland and Mashonaland.

With the dry sunny weather prevailing at this season the maize will ripen in a satisfactory manner, and thus every promise is given that both in bulk and excellence of sample the maize crop this year will be considerably above the average.

Other crops, Kaffir corn, millet, manna, etc., are also of more than average bulk. The wheat that was experimented with this season, as a rust-resisting summer crop, has unfortunately failed in maintaining that character in Rhodesia. So far we have received no reports, that, where it was sown in December, it escaped being severely rusted. The continuously damp weather in January and February favoured rust attack and was fatal to wheat; but maize, although affected in many instances, has come on to ripening without being seriously injured—the plants being so strong and vigorous having resisted the attack.

As will be seen in the notice in another column, farmers are invited to make some experiments with varieties of wheat and other cereals as autumn-sown crops. Although there are no doubt a good many places where, by sowing in March or April in damp loams, both wheat and barley will yield a crop without irrigation, yet, if growing wheat is to be pursued on a large scale throughout the country,

irrigation must be provided in order to secure the best returns. It must be noted that the introduction of the very best varieties of seed at the outset of grain growing, will have the greatest influence on the value of the product commercially.

Although the need of making provision for a water supply does not strike one as being very obvious after such a heavy rainfall, yet nothing is more certain than a long period of drought supervening, with its accompanying effects on the water supply of farms before the next season's rains. The services of Mr. H. M. Oakley will be most welcome in affording some more information to farmers regarding the underground supplies in the different districts, and the best measures to take in making these stores available.

A good many water bores have been put down already in Matabeleland, and other farmers will be encouraged to proceed on receiving more definite information as to the prospects of obtaining at a moderate cost a much-needed supply of pure water.

The farmers in the Bubi district are to be complimented in taking the lead in having the Fencing Ordinance put in force. The work of fencing is, perhaps, the most urgently necessary among all the schemes put forward for improving the methods of carrying on agriculture in Rhodesia. Once accomplished in this district the advantages will soon be apparent when other districts will have to take the matter up in order to keep with the times.

The lecture on Rhodesia, by Professor Wallace, at the Royal Colonial Institute, appears in this issue, together with the subsequent discussion at the meeting.

Farmers will have the opportunity of reading an eminent agriculturist's impressions of Rhodesia after paying it a visit, and can compare these impressions with the facts they are dealing with as actually experienced.

We are glad to be able to report that the Shorthorn and Aberdeen-Angus bulls, imported by Mr. Williamson, are doing very well. Three of the Aberdeen-Angus animals, although stabled on arrival, contracted Redwater, had a severe re-action and recovered.

Mr. Zimmermann, Darwindale, inoculated his bulls (six) and unfortunately lost one Shorthorn.

Considering that these animals were imported in the middle of summer, when Redwater is most virulent, the results are most satisfactory.

Regulations have been promulgated prohibiting the introduction of cattle from North of the Zambezi. Importations via Feira cease at once, except for cattle for introduction of which permits had been issued prior to the date of the notice.

Slaughter cattle will be allowed in via Victoria Falls until 14th May, and breeding cattle from 1st April to 14th May, after which date no further importations will be permitted. These steps have been decided upon in consequence of the existence of a disease near Broken Hill and Fort Jameson, caused by the *Trypanosome Dimorphon*. Clinically the disease is distinguishable from the ordinary Tsetse fly disease of Zululand and this country. But according to some observers it can be transmitted by ordinary biting flies, and herein lies the danger.

Further investigations will be made, and it is hoped that the disease will be found to be no more serious than the ordinary fly disease, and that the Regulations now in force will not be permanent.

Rhodesia and its Agricultural Possibilities.

Paper read before the Royal Colonial Institute by Professor ROBERT WALLACE, F.L.S., F.R.S.E. (Professor of Agriculture and Rural Economy in the University of Edinburgh).

(From the "Journal of the Royal Colonial Institute.")

When the British South Africa Company in 1889 acquired by Royal Charter its patent to occupy and govern Rhodesia, the area of the country was provisionally estimated at 750,000 square miles, but the actual extent since the delimitation of the Portuguese frontier on the West has been less than 440,000 square miles: made up of North-Eastern Rhodesia, estimated at 109,000, and North-Western Rhodesia at 182,000 square miles, together with Southern Rhodesia with 148,575 square miles. Even in its reduced dimensions the territory is a magnificent heritage wrested from barbarism by the enterprise and foresight of Cecil Rhodes and brought under the civilising influence of the British Imperial Crown.

It is to Southern Rhodesia, which comprises about one-third of the whole, and is separated from the Northern provinces by the river Zambesi, that special attention will be drawn to-night, because it was to that province I paid a visit of agricultural investigation by instruction of the British South Africa Company during the months of July and August of last year, when every facility was provided so that the best use could be made of the available time to see representative samples of everything which fell within the sphere of the proposed survey. Excursions were organised from the two capital centres. From Bulawayo, erected on the site of Lobengula's Royal Kraal, with in 1907 a white population of 3,502, Matabeleland was inspected, and from Salisbury, with its 1,685 whites, Mashonaland.

The altitude of the great central plateau on which Rhodesia rests ranges from 3,500 to 6,000 feet above sea level. There are depressions great and small in the river valleys, and there are a few low local mountain ranges, besides a section of the great mountain midrib of South and Central Africa familiar to all in the earlier settled regions by the name of Drakensberg Mountains. This range forms the eastern boundary of Southern Rhodesia in the mountainous country of Melssetter and Inyanga, both noted for the sweetness of their pasture and for their special suitability to woolled sheep. Being south of the Equator the seasons in Rhodesia are the reverse of our own. During this dead month of winter Rhodesia is experiencing the counterpart of our July. But the climate of this most delightful of all the tropical countries I have visited is not only moderated by its elevated position, but tempered by the six hot months—*i.e.*, from about the end of October till the beginning of April—being also the wet months. During this period most of the crops which are essentially tropical are grown without any call for artificial watering, but the crops of more temperate climes can be raised during winter by aid of irrigation or by taking the opportunity to plant them on damp hollows too wet for cultivation, or for the growth of crops in the wet season. By these means wheat, which would be completely destroyed by rust at any other period of the year, can be successfully raised on restricted areas.

The course of the trunk line of railway to Salisbury and the north has been rightly located along a great central ridge or watershed that traverses the healthiest

part of Southern Rhodesia. Near the railway the soil is not so good in many places as it is further off, and especially in the lower river valleys, where the pasture is sweet and most desirable for winter grazing of cattle; but there the climate is not so favourable at this early stage of development for the residence of Europeans.

The total white population recorded in the census of September, 1907, was 14,018, and the most likely estimate of the total number of farmers in Southern Rhodesia falls considerably below 1,000. The total native population at that time amounted to 662,600, made up of 445,000 in Mashonaland and 217,000 in Matabeleland. The chief industry of the country has been gold-mining, which in recent years has pretty steadily advanced in spite of the disadvantages of high railway rates on machinery and other mining necessities, and the very high and sometimes enormous prices that had to be paid for the food of the people employed. The rate of progress may be gauged by a glance at the following official return of output:—

	Ounces.
November, 1891—December, 1898	22,911
January—December, 1899	56,742
January—December, 1900	85,367
January—December, 1901	172,035
January—December, 1902	194,170
January—December, 1903	231,872
January—December, 1904	267,737
January—December, 1905	407,048
January—December, 1906	551,895
January—December, 1907	612,053

Total 2,601,830*

Value about £9,300,000.

It was in the year just closed that the total output of £10,000,000 worth of gold since the Chartered Company began operations was passed—a creditable and promising performance when the difficulties with which the enterprise has had to contend are taken into consideration. The great majority of the mines have been established on the sites of ancient workings, where from the extent

* January—December, 1908 606,962 ounces [Ed].

of plainly visible surface disturbances large quantities of gold must have been extracted. Although it has not yet proved to be the El Dorado that Rhodes and the early pioneers anticipated, it is safe to conclude from its past record, from its proved reefs, and from its vast unexplored possibilities, that Rhodesia is destined to be one of the great gold-yielding countries of the world.

The initial mistake made in regard to the development of Rhodesia was trusting too exclusively to gold-mining to develop its general prosperity, and neglecting to offer fitting encouragement to more of the right class of settlers to occupy the land. Not only has the country as a whole suffered, but the mining interests have also seriously suffered because of the excessive prices which have had to be paid for food that had to be imported and that might have been grown to advantage at hand.

I hope that in this respect a new era is about to dawn, and it is now fully understood that the first step of importance in developing the country must be to secure during the next five years at least 2,000 specially selected farmers with sufficient capital to take up and settle a large area of land now lying derelict and worthless. Till a considerable accession to the farming population is made it will be impossible, from lack of numbers, for them to organise a co-operative system of marketing their surplus produce in Britain, where alone they can depend upon establishing bedrock prices. With the growth of the mining industry, which looks particularly hopeful, in the line of from three to five or even ten stamp batteries, there will be a growing local demand for all classes of farm produce, but, with only a local market to depend on, the danger of it becoming overstocked is too great to permit the building of a prosperous farming industry.

Rhodesia is pre-eminently a cattle country. Agriculture, or rather tillage, is practised, of course, for the support of the native population and the European workers on the mines, and it will continue to extend, as we have already indicated, with the increase of population, but as a means for the development of the country it is quite out of the question for the following among other reasons:—(1) The extent of really good arable land is small in relation to the area of the country. (2) The tropical products which do well under favourable circumstances in certain years—for example, tobacco and fibre

--are too expensive to work, require too much technical knowledge, and are too risky, from the points of view of production and of marketing, for a pioneer settler to depend upon them as his mainstay. In the mealie crop, which grows excellently and does not conform to this category, there is not sufficient inducement in the possible few shillings a bag of profit on which to develop a country. (3) The supply of native labour is so deficient, unreliable, and disorganised, not to say costly, that with even a better agricultural subject than Rhodesia, it would be practically impossible to make cultivation pay on a wholesale basis, which it would do if it were made the means by which the country could be settled.

The competition of the mines has raised the wages so that a piccaninny without experience begins to learn to work at 5s. per month, and an ordinary farm hand averages 15s. a month and food. A full-grown man consumes per day a little over two and a-half pounds of mealie meal, or its equivalent in other food grains, which are sometimes locally preferred. The extent to which wages have been artificially raised may be gathered from the fact that the wage of an ordinary native cultivator in Nyasaland, which also supplies much labour to the Rhodesian mines, is only 5s. a month and food. "Boys" who are expert drivers command much higher wages than ordinary labourers in any part of South Africa.

It is asserted by authority that on two occasions within comparatively recent years 90 per cent. of the cattle of Rhodesia died. On the first of these the cause was rinderpest, which comes from the North, and was referred to, though not by name, in Joseph Thomson's "Through Masai Land." The second devastation was by East Coast Fever, a parasite blood disorder distantly related to Texas or Redwater fever, which, like it, is communicated by tick bite. The disease has probably been endemic from time immemorial in the tropical part of the East African Coast, as is perhaps indicated by the fact that certain of the humped cattle that come from that region are believed to show a greater degree of immunity from this, as they do from other diseases, than do cattle from other parts of the country.

Although disaster has thus twice overtaken the cattle industry, there need be no fear of its recurrence when, as now, all the diseases that could lead to it are understood and the means of prevention known.

That Rhodesia is a great cattle country is no matter of speculation. It was a demonstrated fact in the time of Lobengula, who had immense herds of magnificent cattle, which, tradition says, were divided according to colour into black herds, red herds, and black and white herds. Black and red animals, because usually dark skinned, were then and are still in high favour, although cattle with a black skin under broken-coloured or even white hair are admirably suited to resist the evil influences of a tropical sun which in Rhodesia is specially trying in summer. Lobengula's black cattle composed the Royal herds, from which animals were selected for slaughter on special feast days. The description I have heard from eyewitnesses of the size and quality of these animals, and the few remaining specimens yet to be seen among the common cattle of the country, leave no doubt as to the capability of the country to produce good cattle if they be managed with the skill displayed by the last great Matabele chief and his Indunas, who were also his chief herdsmen. The cattle unfortunately are gone. The Mashona cattle now found in the thickly populated cattle district of Victoria, which escaped the wholesale ravages of disease, and those that remain in Matabeleland, are small in comparison with the original Matabele cattle; but the country which produced them is there. It is true it has run wild, and the pasture has degenerated and gone back into the condition of an unkept wilderness, partly from want of grazing and keeping down, which is an essential in the management of all good grazings in every country, and partly because the tall, withered grass is burnt off every winter by one or other of several groups of law breakers, who are too rarely caught and punished, such as natives in search of game, prospectors looking for gold-bearing reefs, careless travellers or malicious neighbours. The annual burning stops the accumulation of humus, which is invaluable for the retention of soil moisture and for the encouragement of the growth of the finer pasture grasses. The practice of driving cattle into kraals at night to protect them from predatory animals is also injurious to the veld, as it removes from it a considerable proportion of the manure which should go to enrich it. This drain has gone on for a very long time, as natives do not trouble to carry kraal manure back to the fields, and in some districts sites



Photo by]

[R. P. White.

Holstein-Friesland Heifer, imported from U.S. by Messrs. McLaurin Bros., Salisbury.



Photo by]

[R. P. White.

Holstein-Friesland Bull, imported from U.S. by Messrs. McLaurin Bros., Salisbury.

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of old cattle kraals are now being dug up by white cultivators, and thus the remains of dung thirty years old, with a modicum of its original virtue still in it, is used for the growing of crops.

The first step necessary in the improvement of the pasture land of Rhodesia is to fence it, so that animals may be allowed to run at night and feed as they naturally would do before the sun is hot, and during the winter time when the grass is moist with dew. It is difficult for one who has not seen a tropical country like Rhodesia, where hardly any rain falls for more than six months at a time, to realise how hard and dry the grass becomes by day in winter, how unattractive it is, and how difficult to reach, owing to the sharp and woody character of the strong stems which protrude to prevent animals getting at the little root-foliage that remains.

The pasture of the country has run wild, it is true, but I know of no such grassy wilderness which would respond more readily to well directed methods of regeneration by an unusual number of possible ways. Fires can be to a large extent prevented when the land is fenced and fireguards made to protect it, and these fireguards are easily contrived. Three or four plough furrows drawn round a small area will stop a fire except when a strong wind is blowing. A wider guard can be formed at small cost by dragging, when the grass is green, a bundle of branches round the area to be protected. The grass on being injured becomes withered under the hot sun, and may be burnt off to form a bare belt over which fire would not readily leap in winter.

The eating down of the rank herbage while green refines the pasture, and the cutting of it to lie and rot to accumulate humus or for hay, which can be made in unlimited quantity and of excellent quality at little cost, leads to the refinement of the rank species and to the encouragement of finer grasses on the unoccupied surface between the original coarse tufts.

By such means, under intelligent management, the stock-carrying capacity of Southern Rhodesia could easily be doubled within a limited number of years, and, in the end, land which will only carry one bullock to thirty acres may be made to graze one on ten acres.

The ploughing of land for a short course of cropping also sweetens pasture in a wonderful way, even without

manuring. The grass, for example, on native lands that have been deserted is far more appreciated by cattle than that of the unbroken veld. The sowing of native grasses is unnecessary, as the soil contains abundance of seed ready to germinate, but by the planting of *paspalum*, which has proved to be a great success in Rhodesia on dry land as well as under irrigation, a marked improvement can be introduced when money is available for the purpose.

The fencing, improvement, and stocking of a country necessitates the complete destruction of the big game and the stamping out of lions, which are still numerous in many of the partially settled districts of Southern Rhodesia. Lions always follow big game, and with the one the other must and will quickly disappear. No ordinary wire fence can withstand the stampede of a few large antelopes, who take no notice of it in the dark in a case of sudden alarm, followed by flight. Unless when wounded, lions in Southern Rhodesia are not dangerous to human beings, and a man-eater is practically unknown; but they are specially fond of donkeys, mules, small stock, and young cattle. There can be no satisfactory settlement of a country where the settler has to divide the profits of his enterprise with beasts of prey.

The eland—the heaviest and most ox-like of the big antelopes of Africa—is easily domesticated, and could be farmed to advantage with common cattle, or run alone like them in tame herds. This practice would to a small extent make up for the deficiency of bovine stock in the country. In a mixed herd the eland bull at two years old is master of the most warlike of common bulls, owing to the activity he displays while fighting, and the way he sweeps the arena with his horns, but in escaping from an enemy the eland is the slowest of all the antelopes. It was said of the late President Kruger that, of the many athletic feats to his credit as a young man, he was so fleet of foot he could overtake an eland. Be that as it may, wild eland calves can be easily ridden down and captured without being exhausted, by a well-mounted horseman. Calves cut off from their mothers will run alongside the horse, and are thus amenable to guidance. We heard of eighty calves which had been captured in Rhodesia being sold to the German Government for breeding in German East Africa, and the measure of

success there attained might equally be reached in British territory, when on an extended settlement of the country a ready and appreciative market could be secured for chilled eland beef in Smithfield. A regular supply of this and other big game might in time be made a paying speciality in London if some enterprising sporting company were to lease from the Chartered Company a large area of unoccupied hinterland in the Sebungu and Mafungabusi districts to the north-east of the Wankie Coalfield, and there preserve and breed in a wild state the various species of animals suitable for the purpose.

The native cattle of Rhodesia and other parts of Central Africa are not of a kind, unless when mated with European flesh-producing breeds, to provide beef which would be appreciated in the markets of this country, but they possess some very important qualities that make them admirable foundation stock from which to procure, by crossing, bullocks capable of supplying a highly satisfactory article. They live and thrive where European cattle would die from starvation or from disease; they are prolific, active, sound on their feet, and make excellent trek and plough cattle under the trying influence of a tropical sun, although their points do offend the eye of a man trained only to admire a blocky, rectangular, fleshy form with long, square hindquarters.

The Africander is the largest and best of the considerable number of breeds or varieties with well-defined distinctions. It is now generally of a uniform dark red colour, although at one time quite half the breed was black. It is believed to have been descended from the aboriginal cattle found in the Cape by the Portuguese and crossed with Spanish Peninsular cattle 400 years ago. In comparatively recent times it has been further modified by North Devon bulls, and with this breed, which is also dark red in colour, it mates remarkably well.

The other native breeds—the Mashona, the Modern Matabele, the Mashakalumbi, Barotse, Ponda, and Damaraland—all more or less from a common origin, mate with the Africander, with results which show them to be merely strains of one large family. Africander bulls can thus be used to grade up and unify all these native breeds, but to bring them into line with market requirements in this country a certain degree of early maturity and flesh-forming quality requires, in the first instance,

to be introduced by a first cross with a North Devon or Aberdeen Angus bull on the smaller cows, or of some other beef breed on the large cows—preferably the Sussex, the Shorthorn, the Welsh, and, in spite of the disadvantage of its white soft feet and delicate eyes, the Hereford. The first cross of any of these breeds would be fit for the London frozen or chilled meat market at $4\frac{1}{2}$ to 5 years old, as it is hardy enough to withstand the climate during winter if reasonable care be given to the improvement of the pasture, and if on the hard or sour veld a supply of natural hay be provided in winter.

The conditions of the country are such that cattle with more than half European blood cannot retain their flesh during the latter part of winter, and the second cross must of necessity be by a half-bred bull—preferably the progeny of a cross from an Africander cow by a bull of any of the European breeds named. To keep up uniformity in the future, and to supply a sufficient number of reliable bulls to ordinary breeders of beef cattle, a few breeders should establish herds of each of the successful crosses under the names of Rhodesian North-Devon Africander, Rhodesian Shorthorn-Africander, and so on through the list already given.

Standard bulls of dairy breeds suited to graze on the veld could be formed by mating bulls of the following breeds: Lincoln Red, Holstein, Ayrshire, and Guernsey, with Africander cows or heifers, and by this means two-fold-purpose cows would be produced. In town dairies, where cows are fed all the year round, the best milking strains of pure blood can be kept with greater advantage than any variety of half-bred Africander.

Few horses or mules are bred in Rhodesia, owing to the danger of loss among the breeding stock from horse-sickness. The satisfactory degree of immunity conferred by the use of Dr. Theiler's vaccine for mules has made it possible to breed jennets from properly selected donkey mares which would be worth £20 to £25 each, or more, and be admirably fitted for the light cart work now served by imported mules.

The little common brown donkey is extremely hardy, and has proved to be a valuable slave to the country in the trying times of cattle plague and coast fever, in spite of its slowness at work and its diminutive size. It might be used with advantage for foundation stock from which

to build up through two generations a donkey mare of serviceable size and quality for breeding hinnies, in the same way that the little humped Zebu cattle from German East Africa may be drawn upon to swell the bovine stock of the country. The larger type of common donkey mare, which is already one generation of donkey life nearer our purpose, is to be found in the Cape Colony. It has been bred from the De Beers imported Spanish Jacks, and, being reared in South Africa, it is hardier than any imported European prototype. The Cape donkey mare—11'2 hands and upwards, taken to Rhodesia at £8 to £10 each, mated with the milk-white coated but black skinned Arabian Jack, 12'2 hands high—would produce a she donkey possessing hardiness, activity, quality, and intelligence, admirably suited to breed jennets. The desiderated jennet or hinny—the progeny of the she-ass specially bred to suit Rhodesian conditions, and a thick-set, strong-boned cob—would be an animal more tractable and horse-like than a mule, built on more slender lines but showing no lack of substance, and possessed of plenty of quality.

The white Arabian donkey, numerous represented in Egypt and Zanzibar, possesses the same sort of hardy constitution, capable of withstanding adverse tropical conditions as the humped cattle from Central and East Africa, and it holds the same relation in this respect to Spanish and other European donkeys as do the native cattle of South Africa to pedigree British breeds. The introduction of the hardy blood into the cross with the brown Cape donkey mare is intended to accomplish a similar object to that which will be attained when standard breeds of cattle are specially formed by bulls of European breeds being mated to Africander cows. There is a general law of breeding in connection with the improvement of tropical animals by mating them with European breeds, in relation to which the ass supplies no exception.

Rhodesia at present is too rough to be a good sheep country. Woolled sheep do not thrive except in a few of the mountain districts, as Melsetter and Inyanga, but with frequent dipping to keep ticks in subjection the two varieties of fat-tailed sheep known in South Africa do fairly well. The so-called "Persian" sheep is in reality a small Central African, black-headed, fat-rumped, woolless sheep, recently imported from the hinterland of

Somaliland, and it possesses greater power of resisting the deadly African heart-water disease produced by the bite of a tick which is fatal to woolled sheep, and in a lesser degree to the hairy, fat-tailed sheep of Cape Colony. The two latter cross well together—the hairy sheep confers size on the progeny, and the Persian sheep quality and early maturity. There is no visible reason why sheep should not be kept successfully in many parts of Rhodesia, where the rough pastures are brought under subjection, or when forage and other crops are grown by cultivation to support them.

Putting aside the question of periodic dipping, which is an essential in a tick-infested area, the best possible means for checking the spread of disease among live-stock, as well as for increasing the value of the pasture, in a country like Rhodesia, is fencing. Using galvanised wire, plain and barbed, and the most durable posts, the cost by contract runs up to £40 per mile. New settlers, who, in their own interests, as well as in the interests of the country, should be all bound to ring-fence their holdings before acquiring the titles to the land, might save a substantial part of this sum by doing the erection and hauling themselves at slack seasons with their own boys. Many of the native woods rot rapidly or are destroyed by white ants and borers, so that only a limited number are suitable for fencing purposes as dead timber; but there are several species which can be used to plant as live stakes to grow and support the wires. Some people object to fencing in this way, as the bark envelops and fixes the wire so that it cannot be tightened up when it slackens and sags; but, in spite of all the minor drawbacks, the use of live branches of suitable trees overcomes the most serious difficulty of getting fencing-stakes in some parts of the country.

The trouble and expense of securing straining-posts can now be overcome by adopting the successful New Zealand method of substituting inexpensive stone anchors for costly straining-posts, and straining by a double-handed screw from the centre of the fence; and another deduction from the sum of £40 a mile made in consequence.

Skill in the management of poultry reaps a maximum reward in Rhodesia. Poultry of all kinds treated with a due amount of attention and technical knowledge live

well and pay well. This satisfactory state of things for the man with the necessary experience is in a great measure due to the fact that with neglect good poultry do badly or die out more readily than they would do at Home. Hardy little native fowls, which have for generations lived about the kraals without being systematically fed, survive, and even give better returns in a small way than when supplied with mealies—a too fattening diet; but imported fowls are liable to contract from the native stock diseases to which many succumb, and they should consequently be scrupulously kept apart.

To safeguard them from diseases produced by tick-bite, and to save them from other blood-sucking parasites, it is necessary systematically to dip poultry every fortnight in emulsions of coal-tar products, and to spray the insides of their houses with lysol water, and even to put a few drops of that excellent antiseptic in their drinking-water. The management of poultry requires system and attention; but, nevertheless, it may be made one of the most important and remunerative of the minor industries of the homestead.

Ostrich farming is still in the experimental stage. Rhodesia is the home of the ostrich, and wild birds live and thrive in their natural state, but they are incapable of producing either a satisfactory quantity of feathers or the best quality for the European market. The native hens, like native cows, will form excellent foundation stock on which to bring up the quality by crossing with imported cocks; but, as in the introduction of fine blood in any other species of live-stock, the capacity of the progeny to live is reduced unless a supply of the special food by which the superior animals are maintained can also be provided. Rhodesia is unfortunately not an alfalfa (lucerne) country, and that marvellous forage crop is mainly responsible for the great success of ostrich farming in Cape Colony. The deficiency in lime of Rhodesian soil is at present believed to be at the bottom of the difficulty; although it would be worth while, owing to the absence of wart-like processes on the roots, to give the nitrogen-fixing bacteria a trial by the use of some form of inoculating material. The domesticated ostrich is no exception to the general rule, that in a tick-infested country all farm animals must be regularly and thoroughly dipped.

Mr. C. P. Lounsbury, Entomologist to the Cape of Good Hope, has worked out the life histories of the various ticks known to communicate the blood diseases peculiar to the live-stock of South Africa, and his results have been confirmed by workers in the same field in other Colonies, so that the methods of extermination now adopted are based on the knowledge gained by scientific investigation of the first order. Together with the earlier work done in the United States of America in connection with redwater or Texas fever, the South African investigations form a very comprehensive history of the tick-borne diseases of farm animals.*

There are a number of tropical crops which grow excellently in Rhodesia, and which might be cultivated as important, yet subsidiary, crops in the districts most favourable to arable cultivation; for example, sweet potato, cassava (the tapioca plant), ground or monkey nuts, and castor seed. The two first-mentioned tuber crops can be grown to feed pigs and other animals that receive hand-feeding, and the cassava may be also utilised as human food, not only in the form of a natural vegetable product like the sweet potato, but, as in Southern India, sliced, dried, and ground into a meal, which is admirably fitted to mix with meals made from cereal grains. Monkey-nuts are already grown to a considerable extent by the natives.

There is a specially hopeful future for the castor-seed crop; one of the best indigenous varieties, if not the best, permits of the beans being easily separated by machinery from the husks. In British India, where castor-seed is largely grown, the husking is the great difficulty, except by the native method of plastering the husks over with cow-dung, which, by becoming bone-dry on exposure to the hot sun, splits them open, liberating the beans. The oil will be required in increasing quantities in South Africa for lubricating purposes on the railways and at the mines, and as soon as the extraction of vegetable proteid from the cake residue by Mitchell's process is put on a commercial basis, there will be a ready market at a good price for all that the country can produce.

* See also *Ticks, a Monograph of the Ixodoidea*, by Nuttall, Warburton, Cooper, and Robinson, published by the University Press, Cambridge.



Photo by] [R. P. White.
Friesland Bull, "Sir David." The property of Messrs. McLaurin Bros., Salisbury.



Photo by] [R. P. White.
Friesland Calves feeding on Paspalum, bred by, and the property of, Messrs. McLaurin Bros., Salisbury.

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Citrus trees grow well, and, contrary to general experience in other parts of the world, the fruit of many of them reared from seeds rivals that of grafted trees, although, in conformity with Nature's law, seedling trees come more slowly to bearing. For fruit-growers who prefer the orthodox grafted trees an excellent hardy native root stock is available for the purpose in the Mazoe lemon, a hardy tree which bears prolifically a coarse fruit with an extraordinarily rough, thick skin. At present there is no market other than the limited one of the mines and the few large centres of population for surplus fruit, which is found practically unsaleable in such an out-of-the-way place as the Victoria district.

The terrors of locust devastation are not now so great as they once were. The past decade has been fruitful of many invasions, and is likely to be followed by a period of immunity; but of all the thousands of swarms, great and small, which were reported throughout South Africa during the year prior to my visit, it is believed that not more than 1 per cent. of the locusts escaped destruction. Of various means employed the arsenical spray of a potency sufficient to kill the locusts, but not strong enough to poison the cattle that might eat them afterwards, was one of the most effective.

The question of native employment and education is one of the burning questions in South Africa. The demand for labour at the mines has raised the rate of wages to the agriculturist, and the liberal wages paid at the mines lead to the retirement into a condition of comparative indolence of a large section of the able-bodied young men who, under better-balanced conditions, ought to continue at work for a good many years longer than they now do. The black man in Africa has been correctly likened to a child of the type which is so irresponsible in his everyday actions that he might be classed as simple-minded, though in certain ways intelligent, easy-going to a degree of being decidedly lazy or indifferent. It is generally admitted by impartial judges that the judicious combination of firmness and kindness involved in the treatment of natives by Boer methods has been more fruitful of good results than the ways adopted by our own countrymen. It is unnecessary to descend to details, but the fact is clearly reflected in the greater respect generally exhibited by natives to their Dutch than to their British masters.

The Dutchman seems to understand the native character better than the Britisher. One striking difference at the outset is that the Boer insists on the native learning the Dutch language, and he gives his orders in his own tongue, while the Britisher attempts to pick up a smattering of kitchen Kafir, and not infrequently makes himself ridiculous by reciting orders, characteristically pointed with strong language, which he does not more than half understand.

The change from the iron rule of Lobengula and his predecessors to the paralysing policy of British rule has been too sudden, and has been fraught with no little mischief to the people themselves, who are now no longer under more than a shadow of control by their paramount chiefs, and are subjected to no disciplinary influence. Their own sweet will is their only guide, and the result is about the same as it is in this country when a child's parents abrogate their authority and leave untutored nature to itself. The unwisdom of rearing spoilt, pampered, and petted children, whether black or white, is so frequently demonstrated by latter-day custom that it needs no elaborate condemnation. The higher benefits of education are lost, and the individual contentment and concurrent happiness only derivable from discipline and a fully appreciated sense of right and wrong between man and man is sacrificed. To these general disabilities may be added, in the case of the natives of Southern Rhodesia, a further grave disadvantage—in no small measure due to the supineness of the Home Government—the physical and moral degeneracy of the rising generation produced by inanition and by the uncontrollable spreading, under prevailing conditions, of a preventable disease.

There is now no possible chance of another native rising on a large scale. The memories of the sufferings during the last Matabele war have transferred the women permanently to the side of peace. Contrary to the general belief entertained of a country where a large burden of the everyday work of the community falls upon the women, in Mashonaland particularly, the women are said to control the husbands if not the household.

The first step towards the elevation of the native population must be made through an education based on discipline. The race is degenerating, not only on account of the personal freedom from the early control necessary

to guide an individual to do what is right, but also on account of the reduction in the amount of animal food they have for consumption since the cattle perished. Nothing struck me with so much astonishment as the present impotent representatives of those terrible Matabele warriors of whom we have read so much. Something in the right direction in this matter has been done recently by the Government re-introducing an allowance of animal flesh into the food of the natives working on the mines. As the live-stock of the country increases in numbers the amount allowed may with advantage be increased. The education which the native requires is not the book-learning which passes for education in this country, and which is quite unnecessary and unsuitable for the South African black, but technical instruction in everyday duties at an early age when his mind is open and receptive, and when he has not yet developed a natural tendency to loaf and grow up idle and lazy. Such a practical training is as impossible to give to boys collected in school centres in Rhodesia as it has been fully demonstrated to be in this and other civilised countries, and a system of apprenticeship ought to be resorted to by which, as a preliminary for demonstration purposes, a certain number of boys should at first be selected from every kraal before the age at which they usually hire themselves to work, and placed for three years under Government regulations and inspection with farmers who would become their instructors. There a piccaninny directed in English would soon pick up a working knowledge of the English language and learn habits of industry, an appreciation of live-stock, and a toleration, if not a love, of hand-labour, which becomes more and more distasteful to idle boys as they grow older. I found that a paramount chief, Um-tassa, had at his own initiative placed his son, Sebalu, with Mr. A. Strickland, at Inodzie, Penhalonga, under conditions identical with those I have stated, and which I had previously formulated, with the exception that, following the custom of the country, orders were given in Kafir and not in English. What a native chief decided was best for a member of his own family might well be accepted as suited to the sons of less enlightened tribesmen. A favourable opportunity will be obtained of trying the system on a large experimental basis if a considerable number of picked agriculturists are selected

and introduced to aid in settling the country. The boys who receive an early practical training would, owing to the advantages derived from work thus grown easy and familiar to them, be induced to continue at it to earn full wages, and thus be able the sooner to return and settle down in their kraals to do their share of the field labour of the family. The wholesale training of the young native boys by the only form of education which could lead to the elevation of their social condition and make them contented with their lot, would be at the same time a great economic gain to the country. At the present time the natives of Mashonaland, and by far the greatest number of the black population of Matabeleland, cultivate the soil by the hand-hoe, in spite of the fact that they own the cattle as well as the means to provide inexpensive one-furrow ploughs, by which they might at much less trouble and expense work their lands thoroughly and grow far more abundant crops. Already 1,000 ploughs are said to be employed by natives growing their own crops in Matabeleland, and all that is needed is the training of the rising generation and the exercise of patience for a few years to make the custom universal. This would liberate a considerable proportion of the muscular power of each kraal to be employed at wage-earning work in other directions, and would save the women from much of their hardest field labour, which, by custom and tradition, they share with the men under existing circumstances.

We can see in the elevation of the native and in his training to cultivate his crops by the plough drawn by the cattle he already possesses, the only hope of establishing a regular trade in the export of mealies to this country. A favourable inclusive rate of 2s. 6d. per bag of 200 lbs. has been established for carriage of mealies from Rhodesia to London, but if the enormous prices of 25s. a bag and upwards of a few years ago were not able to induce Rhodesian farmers to grow mealies in large quantities, the prices for maize now ruling in Britain are not the least likely to do so, although they are exceptionally high for Europe. Moreover, the chances are that normal prices will be touched here before very long. The Kafir could grow mealies at much less outlay than the white man, and there is no reason why a trade in Kafir-grown mealies should not develop if organised on business lines.

apart altogether from the white cultivation. A few years ago there was a considerable trade in mealies grown in the Victoria district by the Mashonas, which has practically ceased with the disappearance of the white traders who carried on the business by barter. There is no question about the superior quality of South African mealies for feeding purposes as compared with maize from either North or South America. This is amply confirmed by starch manufacturers, who say they contain more albuminoids, and are in consequence not of so much value for their purposes.

I heard of many minor cases in which trouble and great unnecessary inconvenience periodically arose to the white population, especially in certain districts, through the want of a rational method in controlling the black population, but shall restrict the indictment to one glaring instance which is doing an incalculable amount of injury to the whole country, and should receive the immediate attention of the Rhodesian Government, backed by the necessary authority from the Government at Home.

In the time of Lobengula not only was the area each kraal was permitted to cultivate defined, but the times when the work of cultivating and harvesting should begin was fixed by the paramount chief. Now, without guidance or authority, natives wander practically anywhere on unoccupied outlying land, and of course by preference into the natural, somewhat open, forest areas. Their practice is to cut the branches from the trees in full leaf, to spread them round the base of the bared trunks, and, when they are withered and thoroughly dried, to burn them, so that the lower bark of the trees is scorched and the trees killed. The mealie crop which usually follows grows luxuriantly on the ash fertilised areas, but not any better for the trees having been killed. The few surviving trees are finished off the second year by firing a pile of mealie stalks round them. After taking three crops, or probably only two on granite land, the ruthless devastators move on to another part of the bush, where also trees of considerable money value are again destroyed, and in turn their dead stumps left to fall after disfiguring the landscape for a term of years. We had evidence of the wholesale nature of the injury from a minor chief, Nyungundya, whose kraal is on the old Salisbury road between Felixburg and Victoria. Stretching

out his arms in the direction of a vast expanse of country to the west of the sandy ridge along which the road passes, he said he remembered when it was all one dense forest of great trees and full of big game (of which he specially named giraffe), but now it is a wilderness of stumps and worthless bush, having paid the penalty resulting from weak-kneed native administration. There is no reasonable ground to doubt that the wholesale destruction of large areas of native timber, mostly by natives, but also to an inexcusable degree by the mines for firewood, has much to do with the decrease in the rainfall of Rhodesia, which has been observed with ample cause for alarm during recent years. The worst feature of the position, so far as the complete destruction of trees by the natives is concerned, is that it is wholly unnecessary. All the benefits derivable from the burning of the branches could be gained if they were spread only a couple of feet from the trunk, so that the life of the tree would be spared. The branches would not spring again so quickly as to overshadow and injure the crops below within the three years the land might be cultivated; but the tree would remain to produce a new crop of branches ready to be trimmed off and burnt for manure the next time the whim of the native cultivator brought him back to his old haunts. It is admitted that the only way the natives could be persuaded to adopt the rational method proposed would be by penalising a number of them for ignoring instructions issued by the native commissioners; but in their own interests—apart from the general interests of the country—no such wanton destruction of public property should be permitted.

[The Paper was illustrated by a number of lime-light views.]

DISCUSSION.

Mr. Gordon S. D. Forbes, M.L.C., D.S.O. (Rhodesia): Mr. Wallace's extremely interesting paper must have entirely dispelled any doubts that may have existed in the minds of those present as to the prospects which Rhodesia offers from the cattle-raising point of view. It will also be welcomed by those who have been connected with that country from its earliest infancy, because Mr. Wallace thoroughly endorses the opinions which we then formed and have ever since held. Those opinions were

formed, not perhaps as the result of any special technical knowledge we possessed, but because of what we saw then and have seen since. One noticed herds of well-fed healthy cattle roaming through South Rhodesia; the rinderpest came and depleted the herds, but from the spectator's point of view the visitation only demonstrated the remarkable recuperative powers of the country. Again the East Coast fever was imported, but in spite of the fact of that disease having been overcome only a few years ago the native population to-day own over 120,000 head of cattle and 400,000 head of sheep and goats. What the white population own I do not know, but, as showing they thoroughly appreciate the necessity of importing thoroughbred stock, I may tell you that within the last ten months over £92,000 worth of imported stock has come into that country, and when you realise that the total farming community is something like 1,000 men, I think you will see that there is some energy and progress among them. Stock-breeding, however, is not the only advantage we claim for Rhodesia. The climate is unsurpassed, if not unequalled, by that of any other Colony, and the newcomer is not called upon to show those powers of endurance which have been displayed by settlers who have to fight their way in other countries. They arrive in a country where no such thing as hardship in this respect is really known. It has been suggested that a certain number of those who take farms would be isolated in such a vast territory; but the fact is there are many miles of railways, and no farmer is ever likely to be placed in such a position of isolation as some in my own country of Scotland during the winter months. It has been pointed out that the mining industry has been making very steady progress, though the number of those actually working in this industry is very small, perhaps not more than 3,000 or 4,000, but at the end of this year they will be producing gold exceeding two and a-half millions. I think the whole progress of the country to a certain extent is shown by the fact that the importation of merchandise alone in the last ten months exceeded one million pounds, while the exports exceeded two millions, and by the end of the year will be between two and a-half and three millions. The lecturer has touched upon a certain lack of enterprise—a reluctance shown by the

natives in using the best machinery for agricultural purposes—but that, as we know, is not a characteristic peculiar to Rhodesia—it also exists in this country; and I may mention that in the last twelve months £12,000 worth of agricultural machinery has come into the country, a fair proportion of which has been purchased by the native, who is willing and ready to learn to adopt methods for obtaining the best results from his work. With respect to native policy, I may say, without raising any controversial points, that I do not look upon the natives as our equals, socially or intellectually; but whether we agree with the policy of the British Government or not, I think those carrying out the native administration have the respect and trust of all sections of the community. The necessity of fencing has been recognised for a considerable period, and legislation has been passed with that object, but you cannot compel men to fence their farms if they have not the money or if there is no system of banking through which they can borrow the money, as in Australia and other places. With respect to veld fires, legislation also has been passed, and the penalties are very heavy for infringing the law. I hardly think that the native is degenerating, but if so it is not, as Mr. Wallace suggests, on account of the food. He is better fed in the mines to-day than ever before. The cattle he then herded were the property of the king, and he dare not kill for food. I will only add that those who are prepared to come to Rhodesia will receive a cordial welcome so long as they are prepared to share the responsibilities of the country. Individual effort plays no unimportant part in the progress of that country, more perhaps than in any other, and we are determined to help that particular section of Africa to arrive at the position which its resources fully justify us in believing it will ultimately attain to, so that when we are ready to join in the great unification of South Africa we believe we shall be able to enter on as favourable terms as any other State.

Major Frank Johnson: As perhaps the oldest Rhodesian in the room, I looked forward to this paper with special interest, and if it has contained nothing that is strikingly new to most of us, that is rather the misfortune of Mr. Wallace than his fault, because South Rhodesia to-day has taken its position as a settled Colony of the Empire, and with its press, its telegraph, its railways, and

its Cook's tours, its conditions and possibilities are probably better known than many other Colonies in the British Empire. With the greater part of the paper I wish cordially to associate myself, particularly with that which dwells on the great possibilities of Rhodesia as a cattle-raising country. Mr. Wallace boldly tackled the native policy in South Africa. With that part of the paper I was much impressed, because I think he is the first Englishman I have heard upon a British platform who has had the pluck to say that the methods adopted by the Boers in dealing with the natives are preferable to those adopted by the British. Personally I am thoroughly in accord with him in these views. It would be much easier for me if I could equally agree with everything he has said in his paper, but I must join issue with him when he throws cold water on the agricultural as distinguished from the pastoral possibilities of Southern Rhodesia. I do not claim to be an expert, though I have been there for over twenty years, but there are plain facts which I think do not tally with the pessimistic view he has taken. He roundly condemns the agricultural future of the country because the extent of good arable land is small in relation to the area. That is a matter of degree, and however small the ratio may be, there is a large extent of agricultural land even on the high veld. Then we are told that tropical products cannot be relied upon, because they are too expensive to work and require too much technical knowledge. I do not know where Mr. Wallace got his data from as to the cost of working fibres, because unless it be within the last few months there is no fibre plantation established in Rhodesia from which you can get reliable data; but I may say that experts who have visited Rhodesia and German East Africa have assured me that the conditions, both as to soil and climate, in Rhodesia are far ahead of the conditions under which Sisal hemp is produced payably in German East Africa. As regards tobacco, there is a great deal in what he said, but, I would ask, can you rely on the seasons in any part of the world? You do not stop fruit-growing in Kent because of one bad year. The same with tobacco. Even if you are calculating on putting tobacco on the European market, labour is not so expensive as to wipe out all profit. We are told that mealies would not pay even with a favourable inclusive rate for putting them on, the

English market. One of two things—either all the farmers in Rhodesia were fools and did not see a fortune staring them in the face, or else, as is actually known, they made more money by other methods of farming. The trouble has been that you have had only two classes of farmers: the Dutch farmer, whose one object has been to simply live, and who as long as he had 6,000 acres and enough necessities of life to keep body and soul together, was content to leave well alone; and the young Englishman, who has come out with capital and has gone on to his farm intending to cultivate the land, but found he could get rich more quickly by other means, such as transporting riding, wood contracting, etc., and so has neglected agriculture. I hold no brief for the Rhodesian Government, who, goodness knows, have had many stones thrown at them, but I notice Mr. Wallace charges them with want of control over the native population, and as a “glaring instance” cites the fact that they do not define, as Lobengula did, the times when cultivation and harvesting were to be begun and ended. That is rather hard, because when I lived with Lobengula I do not remember that marked regularity of seasons, but assuming that it was so you must remember Lobengula had what the Company had not—a large staff of well-trained witch doctors, who produced rain whenever Lobengula told them, and therefore with the rain you could fix the period for cultivation and harvest. We are greatly indebted to Mr. Wallace for what he has told us of the capabilities of Rhodesia as a cattle raising country, but young farmers who are not cattle farmers should not be put off going to Rhodesia on account of what the paper contains. I could name two men who went out from Scandinavia four years ago, one with £23 and the other with £83. One of them, for purely domestic reasons, returned, but his partner has farmed the joint land, and that one man has now some 400 acres under cultivation. He is now making money which he never dreamed of making in Scandinavia. He produced tobacco in small quantities, fruit, vegetables and mealies by sheer hard work, and raised through his profits the capital by means of which to bring under cultivation the 400 odd acres of land belonging to him.

Mr. F. J. Newton, C.M.G. (Treasurer-General, Rhodesia): It is a great pleasure to me to be able to contribute my humble meed of appreciation of Mr. Wallace's

address, the more so because I happened to see a great deal of him in the course of his travels through Matabeleland and Mashonaland, and I can bear witness to his conscientious efforts to arrive at sound conclusions. He is not only an expert by training, but by experience, having visited many countries and seen many local experts, and he is therefore in a better position than most men to judge of the capabilities of the country. We therefore receive with great pleasure the testimonial he has given Rhodesia as a country for producing cattle. While we Rhodesians accept with pleasure that statement, we respond to the challenge concerning the capabilities of Rhodesia as an agricultural country. Time alone can show who is right, but I can assure him that his remarks on that branch of the subject will not receive general endorsement when they reach the country we come from. He paid us a pleasant compliment by saying that, no matter what happens, Rhodesians always come up smiling, and sure enough the two speakers after him, true Rhodesians, came forward in that spirit and dealt fairly with the case he put and also with the case he did not put—that is, the claims of Rhodesia to be an agricultural country. I could have wished he had had something to say about our efforts at producing what we consider our staple crop—that is, mealies. I do not wish to blow the Rhodesian trumpet too loudly, but I believe the Director of Agriculture for the Transvaal is in the room, and that he will endorse the statement that we have gone ahead of the other States in producing what is commonly called pedigree mealies. As regards tobacco, I admit as yet it is not a staple product, but I feel confident its possibilities are enormous, and indeed Mr. Wallace relented a little when off the platform showing the pictures, and admitted that tobacco might have some future, but only as a by-product. I may mention a case within my own experience. A citizen of Belfast, a man of education, came out in August, 1907. He made bricks, built a house, put up two tobacco barns, and ploughed sixty acres with a span and a half of oxen, and if you will go to the Rhodesian Emporium in London to-day you will find some of the finest Virginia tobacco grown as his first effort in tobacco culture. He is going to make a substantial sum by that one year's operation. ["What was his capital?"] It would only be the oxen, two ploughs and cultivators'

wages for the year. He is going to get all that the first year, and possibly a large proportion of the labour employed in making the house and two barns. There is no doubt tobacco is easily grown and can be well grown. I mention one thing that has come to light in our own experience in Rhodesia in the last two years, and that is that the tobacco plant, instead of requiring an unfailing supply of moisture, is a drought-resisting plant. It wants a good start in the first few weeks, but Turkish and Virginian tobaccos, the latter in a less degree, can get along very well for a long time without rain. Of course they get the moisture from the summer dews. Mr. Wallace did not give us any notable panacea for our present condition. In certain passages of his address he hints at a very large body of settlers being introduced into Rhodesia. For myself, I do not mean to advocate that any man should dream of coming and settling unless he has the command of a certain amount of capital, or unless he is prepared to take off his coat and work for wages. I take it that most people who come out to settle come to acquire land and make a place and property for themselves, and they must have at least £750 to spend in that case. It wants money to buy a span of oxen, a plough, two or three cows, money to live on for a year and a half, and money to pay the "boys'" wages. It will require very good handling indeed to make the money do that, and I believe the British South Africa Company is only right in making this a *sine quâ non* for persons who propose to come out and settle. Mr. Wallace has hinted at 2,000 settlers being imported in the next five years. Well, those men must each have that amount. There is another difficulty. These 2,000 men must each have a span of oxen, which means fourteen or sixteen, and a few cows, and 20 times 2,000 means 40,000. I do not know where you are to go to get 40,000 head of cattle in the next five years to stock these settlers with, but we look with some alarm on any undue or hasty or forced importation of cattle into that country. The reason is well known. We have stock there which are increasing steadily, and do not want any set-back to the country, and such an importation must only bring risk and seriously jeopardise our staple industry. I hope that anything I have said will be accepted by Mr. Wallace in the perfectly friendly spirit in which it was intended, for we have all the same object in view, which is the good of Rhodesia.

Lieut.-Col. A. Weston Jarvis, C.M.G., M.V.O.: I was somewhat surprised to hear my friend Mr. Newton name so large a sum as £750 as the necessary capital for a settler. It is possible, I think, under certain circumstances, to find settlers who would be able to make a good living with somewhat less than that amount, and I am at present occupied in trying to work out a scheme by which we might be able to settle a large portion of the best agricultural land of Rhodesia on a much less capital than that, on condition, of course, that certain facilities could be given, which we should be ready to give, in the way of providing cattle for ploughing the land, and also cows for domestic purposes. It depends, of course, on the amount of land the settler would occupy; but the scheme I have in mind is to settle plots of land of, say, 200 or 300 acres, giving each settler the right of grazing on a common area, and provided that cattle were given to him on fairly easy terms of payment I think he could start life and do well on considerably less than £750. It would, I think, under these circumstances, be possible for a man to start with £300, or, preferably, £500. But there is no doubt he is right when he says that a man wants to see his way to providing the cost of living for the first year. Mr. Newton has naturally taken into consideration their having to purchase all the cattle they require, but if these could be provided in the first instance I think the amount might be reduced. Nobody believes, or has believed, more in the future of Rhodesia than I have. I have worked very hard at it, as has everybody connected with the country. We have been knocked down very often, and yet we have always come up smiling; but for myself, I think we have turned the corners now at any rate, and the future of Rhodesia I look upon as one which is going to be very prosperous indeed. All we want is population, and the question is how to attract it. If we could find a good scheme of settlement in some such way as I have indicated, I think we might attract a very useful population, who might make farming profitable, and they by degrees might be able to increase their holdings, and so improve the farming industry very materially in the Colony.

Capt. J. C. Jesser Coope: We have listened with keen interest to a very instructive address, which will be read with no less interest by large numbers of agriculturists

in South Africa, to whom Mr. Wallace is well known through his valuable book on the farming industries of Cape Colony. Rhodesian farmers will appreciate the value of having their industry reviewed by so eminent an authority, and will be grateful to the British South Africa Company for having arranged his visit. It is significant that, although he only saw the country during the winter months of July and August, he is yet able to confirm the high opinion of the great pastoral prospects of the country already expressed by many other authorities. You have heard that the Rhodesian farmers have already started to grade up their herds on the lines suggested by importing thoroughbred bulls from this country. Last year I assisted at the selection of a large number of thoroughbred Shorthorn bulls from the Birmingham Show, and a few days ago I had a letter from a friend in the North asking if I could look at fifteen thoroughbred Angus cattle which were being shipped out. The results on the local herds will be carefully watched. Many of the Rhodesian cattle show distinct dairy qualities. The Mashonaland cow gives milk exceptionally rich in butter fat, and there are many cattle descended from the Holstein strain which will give a daily lactation average of from sixteen to twenty bottles throughout the period. There is no doubt there are great prospects for dairy farmers in Rhodesia. They have little difficulty in raising crops giving a high nutritive ration, enabling them economically to feed their cattle throughout the winter and maintain the milk yield at a high average, making the production of first-rate butter and cheese profitable at economic rates. Mr. Wallace has not failed to praise the great qualities and enormous quantities of our hay. He has pointed out that the local mealie is of higher nutritive value than that grown in North and South America; this, together with the fattening qualities of the native grain (nyoite), and the fact that a cattle food equal in albuminoid ratio to the finest cotton cake can be prepared from the local ground nut, will enable winter feeding of high-class stock to be carried on economically. The lecturer has referred to the cultivation of the monkey nut. Some of us believe the nut is going to be one of the regular rotation crops. There is a local demand for the nut as a ration for the mining boys, and there is practically an unlimited market in Europe at prices ranging from £13 to £15 a ton. Mr.

Wallace's remarks on the education and employment of the native will be received with sympathy by a large number of thinking men in the country. It is no doubt a question of great importance to all South African industries, but of special importance to the agricultural industry, as so many of the natives are agriculturists, and I believe a large number of the young natives would respond to agricultural education on the lines suggested with benefit to themselves and the country. I wish Mr. Wallace had said a little more on the subject of scientific education for white settlers. One of the results of the neglect of agricultural education in the past has been that South Africa has allowed a large portion of her market to be captured by over-sea agriculturists. I would like to see a number of young South Africans enter English agricultural training colleges annually, for we should thereby obtain a class of agriculturists capable of scientific research and of improving the methods of local agriculture. I wish also he had mentioned the enormous amount of agricultural products South Africa still finds it necessary to import, and the great opening this home market offers to the prospective Rhodesian farmers.

Mr. S. Simpson: I am an old student of Professor Wallace's, and am just now back from three years' work in Nyasaland, which borders North-Eastern Rhodesia, where I have been working on agricultural development. I am not going to compare Nyasaland with Rhodesia, for I have not been in Rhodesia, but the two countries are similar in many respects. Nyasaland is an agricultural country. That we have proved and are proving every day. We are growing good cotton, good coffee, and excellent tobacco, and this year the Imperial Tobacco Company of Great Britain and Ireland have opened a big factory there, and the industry is well assured. Although Mr. Wallace has dwelt chiefly on the pastoral life of Rhodesia, I have seen most excellent samples of tobacco grown there, and Rhodesia must not give up tobacco. With regard to the pastoral industry, we have cattle, and we find that treating our cattle as Rhodesians do we get excellent results by crossing Shorthorns with native cattle. Sheep are just as in Rhodesia; they do not do well with us. But pigs do well, and I think some of these countries ought to give far more attention to them. The difficulty of curing bacon and hams is easily overcome,

and consider the enormous advantage of being able to export something which sells at 4d. or 6d. per lb. instead of maize, the carriage alone of which costs a few pounds per ton. With regard to trees, everyone knows that is a burning question. We have seen the disastrous results of cutting down timber shown plainly in every part of the sub-continent, and I am sure the policy of allowing the natives to cut down trees will act badly on the future condition of Rhodesia, and that something ought to be done to stop the process and also to plant up forest areas to replace those which have been denuded. I think the natives want to be educated to know that they could have some suitable rotation of crops on the same soil without having to cut down timber over new areas. Further, I think that in every country where we have a big native population we should have some simple form of school establishment where the sons of the chiefs could be brought together and trained thoroughly in agriculture. It would have a great effect (as in the case of the Sudan) on the future of any country in which that system was adopted. As regards the future, I believe the prospects of Rhodesia are very good, and I believe the prospects of Nyasaland are very good. But we want men with capital. The great fault I find with those who advertise is that they persist in putting the limit of capital too low. If a man says to me he wants to go to Nyasaland and asks what capital he ought to have, I tell him he should have £2,000 and no less.

The Chairman (the Most Hon. the Marquess of Winchester): I think before we separate we ought to pass a vote of thanks to Professor Wallace for his interesting address. I notice he omitted to call attention to the large and increasing number of young Rhodesians who have been born and bred in the country. Our schools are now increasing in number, and the numbers attending them are also rapidly increasing. The aim of our great founder, Mr. Cecil Rhodes, was that in that country there should be raised a population British in sympathy and in instinct, and full of that vigour which Colonial life adds to that usually found in the British race. I think the pioneers of Rhodesia have carried out Mr. Rhodes's desire to the letter. You have heard how they encountered the rinderpest, the East Coast fever, the locusts, and other troubles. But there is such vitality

in the race that they have succeeded in founding agriculture now upon a thoroughly sound footing. Mr. Wallace says our mistake was that we did not pay sufficient attention to the development of agriculture in the first instance; but in the first instance we had not railways, and therefore it was quite impossible to take the agriculturists by the hand and set them down where there was no market. The Company, therefore, fostered the mining industry as far as possible in order to create a market for the agriculturist. That has now been successfully done, and we look forward to being able by careful selection to induce a further accession of population, having with them a certain amount of capital, because until the capital has made the country it is quite impossible for the landless man to do any good. It is no good for a man to go and pit his work against that of the black. The farmer could not afford to employ white labour, because he can get black labour so much cheaper. We have had mining experts who have gone out to that country who have not patted us altogether on the back for the way we have carried out our mining adventures. Mr. Wallace has not patted everybody on the back with regard to agricultural methods, but I think there is a great deal of sound common sense in what he says, and he has put the stamp of his great and well-known capacity on certain salient points. Through his knowledge of other countries he has been able to point out to the farmers of Rhodesia how they can improve their present methods. There is one point on which he laid the greatest possible stress, and that is the question of fencing. It will be possible, I hope, shortly, when we have a larger population, to establish land banks and co-operative farming. It is that which has made Australia the country it is, and though I hope we shall not take from Australia many of its present difficult and trying problems, yet we ought to try to take the best. I hope we shall avoid the difficulties which Australia has fallen into in its system of federation, and that our Constitution, when formed, will be one which will tend to the universal prosperity of South Africa. The British South Africa Company, in their desire to promote the welfare of the settlers, have recently appointed as their agricultural expert a man who is well known to Professor Wallace, and who has had considerable experience in the Cape—I mean Dr. Nobbs. We

hope to be able to associate with him a staff thoroughly versed in agricultural methods, and to assist him in impressing on the settlers the necessity of applying scientific methods. Science in agriculture is a matter which you may say we have not paid sufficient attention to in this country, but if it is not paid sufficient attention to in Rhodesia, I can assure you it will not be for want of opportunities which will be given to settlers of seeing the best possible methods employed. There is one thing I should like Professor Wallace to tell us. If he were a young man himself with a limited amount of capital, and wanted to settle in a Colony, what Colony would he go to? If he would tell us he would sooner go to Rhodesia than any other Colony, I think we may safely accept it that Rhodesia is a country which anybody may safely put their money on.

Professor Wallace: I thank you most cordially for the hearty way in which you have received this vote of thanks. My paper has received a certain amount of criticism, but that I expected, and I am only pleased that it has not been worse. I have not said anything against agriculture in Rhodesia. I think the prospects of agriculture are hopeful in a great many directions, but I said it was not by agriculture Rhodesia was going to be developed, but by stock, and the men who do that can concurrently practise a great deal of agriculture. It is no use men going there with £300 or £400 of capital. A man ought to have horny hands, a good stiff back, and at least £1,000 in his pocket, and he has got to be the best workman on his farm. Rhodesia is not to be settled by soft-hearted and soft-handed people. With regard to the appointment of Dr. Nobbs, I am glad to think the Chartered Company has already taken some of my advice, and I hope they are going to take more. In Dr. Nobbs they have secured one of the best practical and scientific experts in this country or in South Africa as Director of the Agricultural Department, and I have not the slightest doubt that if they follow up that appointment, as Lord Winchester suggested, and support him with properly trained experts, you will find that the agriculture of Rhodesia will soon take a very different position from that it occupies at the present time.

A vote of thanks was given to the Marquess of Winchester for presiding, and the proceedings then terminated.

A letter had been received from Mr. Henry Samuel regretting his inability to attend. He wrote that the agricultural future of South Africa had always been prominent in his thoughts, and his experience of thirty years spent in these countries had impressed upon him the fact that the future of South Africa rested, not so much in her mineral wealth—great though that is—as upon her vast agricultural resources.

“We must all look forward,” he said, “to the day when South Africa develops her resources so as to make herself a self-supporting country, with a surplus of agricultural products to export, instead of being, as at present, a land which, in spite of its fertile soil, depends on overseas supplies for all but the barest necessities.

“Rhodesia at the moment appears to be the only independent and British possession in South Africa which is working on thoroughly Imperialistic lines.” The various Governments (Mr. Samuel added) should now combine their energies and devote themselves to a great scheme for the development of agriculture and for the encouragement of settlers of a desirable class. They must provide means for the assistance of new-comers, not only with advice and instruction, but also with such aid as would enable those who are willing to work, that they may establish themselves and thus become a valuable asset to the country, notwithstanding the possible smallness of their original money capital.

Wheat under Irrigation.

By J. CAMERON.

In the pursuit of wheat growing in Rhodesia there are certain matters that claim particular notice, owing to the peculiar circumstances of the country. In damp and wet seasons it is well nigh impossible to find a variety of wheat that will resist rust. At the same time certain varieties are to be found whose resisting powers are such that the plants hold out long enough to mature the grain. In some cases a quick maturing habit pushes the crop ahead so fast that it escapes the attack. Besides rust resisting character, a wheat, to be entirely successful, should

possess good milling qualities—must be capable of being made into good flour—neither excessively starchy nor too glutenous. When only a few varieties, having the same or nearly similar properties, are grown throughout the country, the grain has a much greater commercial value than if an endless variety of small parcels are supplied to the miller, having different characteristics and no uniform standard.

By adopting varieties of wheat to start with that in the greatest degree combine rust-resisting and milling qualities, the Rhodesian farmer will be in a better position to furnish such marketable article than if the production of the grain were allowed to run in separate and desultory channels.

Gluyas Wheat, in Australia and Cape Colony, has proved to possess a grain highly commended by millers, and at the same time to be rust-escaping if not rust-proof. It requires rather thicker sowing than most other wheats, as, like all quick growing varieties, it does not stool out well. About 80 lbs. per acre should therefore be sown. Rietti wheat comes originally from a district of that name in Italy. It is most carefully selected, and kept pure in variety by an association formed by growers in Italy for that special purpose. Rietti wheat has been known in Cape Colony for several years, having been first introduced casually. It has, however, now proved remarkably well adapted for Colonial conditions, and fresh seed procured from the original source has been shown to give even better results; this variety tillers well, but is slow growing, especially at first. It has, however, not done well far inland.

Cape barley, Chevalier barley, Beardless barley, and barley wheat are all cereals specially recommended as excellent green forage. For the grain product, if grown with that object, Chevalier barley yields a fine quality of grain, both for feeding and malting purposes. Barley wheat is already known in several parts of Rhodesia. Last year a fine crop of this variety was grown by Mr. C. C. Macarthur, at Hillside, near Salisbury. It was sown in April, and gave a heavy yield on a damp, loamy soil, without any irrigation at all.

Rye has not yet received much attention in Rhodesia, but as a forage crop it deserves recognition and a trial. It furnishes green food or hay equal to, if not even

superior to, oat forage. It grows on all soils that are used here for wheat, oats or barley, while on light sandy or gravelly soils rye may be expected to yield a heavier crop than any of them. In cutting rye for forage, it should be harvested while quite green—as soon as the grain is in the milky stage—for if allowed to begin to ripen the stalks get hard and woody. It should be sown at the rate of 80 lbs. per acre.

In certain spots it is possible to grow the different varieties of barley, and probably rye, without irrigation, as a winter crop, but generally to secure full yields more or less irrigation is requisite. It happens that the soils that could produce a crop without irrigation are nearly always too wet to work in March and April, at the time when the seed should be sown. By the time the land is dry enough for being worked the season is too late. But in all cases of winter cropping, whether wheat or other cereal, the land should be ploughed and the seed put in at the earliest possible moment after the summer rains are over. April will be about the best time. It is better for crop growing under irrigation that the plants at the very early stages of growth should receive as little irrigation water as possible, but that they should be encouraged to take deep root by following up the damp which is still retained in the soil. In order to retain the soil moisture as much as possible when the land is being ploughed, the harrowing should follow immediately after the plough. This will keep the soil closed up, preventing rapid evaporation. Since a smooth even surface is indispensable, it may often be necessary to run a cultivator through after the first harrowing, in order to level the surface, thereafter harrowing again. Judgment must be exercised in preparing the seed bed, but more seed is lost through the soil being too rough than too fine. After the seed is sown it should be harrowed in sufficiently. If a drill machine is used for sowing the seed, the land should receive all the cultivating and harrowing before, and not after sowing. As soon as the plant has got a good hold, and stands an inch or two high, the harrows may be run over the land. This will prevent caking and form a mulch to conserve the moisture. The crop will then make a good stand and take deep root. Unless actual signs of failing are shown no further irrigation water should be given until the coldest part of the winter

is passed. When natural growth is again starting, a good soaking should be given to the crop, which will then carry on until coming into ear, after which, in most cases, only one further supply of water will be necessary.

More harm is done to the crop through an excess of water than what follows from the supply being short. When land is waterlogged, unhealthiness of the crop ensues, and disease is given every opportunity.

Practically there is only one method of irrigation now in general use throughout Rhodesia—that of flooding from field laterals. It is the easiest and least expensive method, only requiring labour carefully applied in carrying it out. The great essential to the equal spread of water is having the land thoroughly levelled on the surface at the outset. The amount which will soak in and be held is also increased by having the land ploughed across the flow of water. Thus the “ribs” at the bottom of the furrow will retain, instead of draining off the water percolating downwards.

Mashonaland Farmers and Co-operation.

Following up the preliminary organisation formed last year, which showed the advantages of combination in dealing with the maize crop, the Mashonaland farmers have adopted a new scheme, whereby the whole control and management of this season's crop is retained in their own hands instead of dealing through an agent.

The committee appointed to draw up a scheme submitted their recommendations to the last meeting of the Farmers' Association. After discussion the following rules and regulations constituting the organisation were unanimously approved and adopted:—

THE FARMERS' CO-OPERATIVE SOCIETY, SALISBURY.

RULES AND REGULATIONS.

1. The name of the Society shall be “The Farmers' Co-operative Society.”
2. The office of the Society shall be in Salisbury.

Objects.

3. The objects of the Society are:—

- (a) To dispose of the maize crops of the members in the most profitable manner.
- (b) To dispose of any other farm produce that the members might choose to send in to the Society.
- (c) Generally to promote the interests of the Society either in selling or buying.

Capital.

4. The capital of the Company shall be contributed by the members in the following manner:—

- (1) Each member shall contribute 1s. per bag on each bag of 203 lbs. of maize sent in to the Society for disposal, which sum of 1s. per bag shall be and become payable immediately on the delivery of the whole or any portion of the member's crop, and shall be deductible from the first money due to the member.
- (2) In the second and following years each member shall contribute 1s. per bag on every bag of maize sent in to the Co-operative Society for disposal in excess of the quantity already paid on.
- (3) Further capital will be raised by means of loans or overdrafts from the Society's bankers on security of the produce delivered to the Society.

Financial Year.

5. The financial year of the Society should be reckoned from the 1st day of April to the 31st day of March in each year.

Membership.

6. *Bona-fide* farmers and traders of European descent may become members by application to the Committee.

7. Every member must at the time of entrance sign his name in the Members' Book, and by his signature bind himself to the existing regulations and any additional regulations or alterations of regulations which may be lawfully made from time to time without any notice from the Society being required.

Resignations.

8. A member may resign at the end of a financial year, provided he has given the Secretary three months' prior notice, in writing. The acknowledgment of such notice of resignation must be made in writing by the Secretary with as little delay as possible.

9. Any member so resigning shall be entitled to withdraw from the funds of the Society any sums of money contributed by him as and for capital in terms of clause 4 hereof.

10. A member may be expelled from the Society by a majority of two-thirds of the members voting at a special general meeting called for the purpose.

11. Resigned or expelled members have no claim on the reserve fund created by the Society.

Committee.

12. The Committee shall consist of seven members, to be elected for a period of twelve months, and such district members as it may become necessary from time to time to appoint. At each annual general meeting all the members of the Committee shall retire. Such retiring members of the Committee shall be eligible for re-election. Any vacancies shall be filled by the remaining members of the Committee until a general meeting can be called for the purpose.

13. The Committee shall act in the name of the Society, and they shall exercise, within the limits of these regulations, the same power as if they had been determined at a general meeting. The Committee shall account and report for all their transactions at each general meeting and special general meeting when called upon so to do.

14. The Committee shall meet as often as is necessary, and their position shall be honorary, but travelling and out of pocket expenses shall be refunded when travelling on the business of the Society.

15. Any member of the Society shall have the right to attend any meeting of the Committee in order to bring forward any special matter or grievance.

16. The Committee shall engage a sufficient staff to carry on the work of the Society, fix their salaries and determine the work to be carried out by the employés. They have also the right of suspension and dismissal.

17. The Committee shall open a banking account, into which all moneys received shall be deposited as soon as possible after receipt. All cheques must be signed by one member of the Committee and countersigned by the Secretary.

General Meetings.

18. The annual general meeting of the members shall be held within six weeks after the close of the Society's financial year.

19. All questions submitted to a meeting shall be decided by a majority of votes, except where otherwise provided by these regulations.

20. No alteration of the present regulations shall be made except at a meeting specially called for the purpose, at which at least one third of the members registered on the books of the Society shall be present.

21. All meetings shall be convened by notice posted to members at their address fourteen days at least before the day appointed for the meeting

Special General Meetings.

22. A special general meeting can be called at any time upon a requisition being sent to the Committee signed by at least 10 members of the Society.

Regulations Regarding Supply of Produce.

23. Every member shall bind himself to dispose of the whole of his crop of maize through the Society, with the exception of what he requires for his own farming and domestic purposes.

24. The members must inform the Committee, in writing, of the quantity of their harvest immediately after reaping.

25. If the crop of a member be damaged or destroyed through circumstances beyond his control, so that he cannot fulfil his engagements towards the Society, he will be relieved of his obligations in respect of such crop if he instantly advises the Committee to that effect.

26. If any member fails to fulfil his engagements towards the Society without the reason provided for in the foregoing clause, he shall be responsible for any loss and damage that the Society might sustain through his action.

Regulations of Payment to Members.

27. Members may receive an advance up to 5s. per bag on the quantity of maize delivered by them to the Society. Such advance to bear interest at the bank rate and to be repayable month by month as the member's maize is disposed of, half the value of the sales being devoted to the repayment of the advance.

28. As soon as a member shall have delivered his crop or any portion thereof to the Society, he shall begin immediately to share in the amounts received by the Society on account of sales made, in proportion to the quantity so delivered by him, at a basis price to be fixed by the Committee.

29. At the end of each financial year the average nett price per bag obtained by the Society over the whole season shall be ascertained, which average nett price per bag each member shall be entitled to receive.

Regulations Regarding Sales of Produce.

30. All sales of produce shall be on the basis of market price.

Interest on Capital.

31. Members shall be entitled to receive interest at the Society's bank rate on capital subscribed by them in terms of Clause 4 hereof.

Liability of Members.

32. The liability of each member shall be limited to the extent of the value of his undisposed quantity of maize in the hands of the Society.

Growers of Early Mealies.

33. The growers of early mealies will receive special consideration if possible.

Dissolution of the Society.

34. The Society may be dissolved by a resolution of a special general meeting called for the purpose passed by two-thirds of the members of the Society, such members being personally present.

Simple Rules for the Treatment of Malaria for the use of Farmers and Settlers.

By A. M. FLEMING, C.M.G., M.B., F.R.C.S. (Edin.),
D.P.H. (Camb.), Medical Director to the Administration of Southern Rhodesia, Salisbury.

There is only one drug which can be considered a specific in malarial fever, and that is *Quinine*. Many other drugs have been tried, but not one equals quinine as a cure for the disease.

Malaria, if properly treated at the onset, is essentially a non-fatal disease, death occurring, as a rule, only in non-treated or imperfectly treated cases. To withhold quinine in malaria, or only to administer it in occasional doses at irregular intervals, is little short of criminal.

For settlers and farmers, the best form in which to administer it is the tabloid form of the Bisulphate, this salt being much more readily soluble, and therefore more easily and more quickly absorbed, than the ordinary sulphate of quinine. These tabloids should not be sugar-coated.

GENERAL RULES FOR THE TREATMENT OF AN ORDINARY ATTACK OF MALARIAL FEVER.

I. IN ADULTS.

(a) *The cold or shivering stage.*

Usually, at the outset of an attack of malarial fever, the patient complains of feeling cold and chilly, and may have a sudden shivering attack. He should be at once put to bed between blankets and kept as warm as possible, with extra blankets and hot bottles if necessary. The bowels should be opened with a gentle purgative, preferably half an ounce (that is half of the usual one ounce packets), or more of Epsom's salts dissolved in half a tumbler of water.

(b) *The Hot Stage.*

The initial cold stage is very shortly followed by what is called the hot stage of malaria. The patient complains of feeling hot and dry; the eyeballs and the back ache, and the temperature rises.

Antipyretics, that is, drugs which reduce the temperature, such as phenactin, antipyrin, and antifebrin, should, as a rule, be avoided; they are rarely required and often dangerous.

Should, however, the temperature rise to 104 or 105 degrees, and the headache and general feeling of illness be very severe, the patient may be given five grains of phenactin in tabloid form, accompanied with a drink of hot milk; this, whilst reducing the temperature and relieving the head and body pains, assists the onset of the third or sweating stage of the attack.

During the hot stage the thirst is severe, and the patient may be given as much drink as he likes in the form of milk and soda, weak tea, or soda water flavoured with fresh lemon or lime juice.

Vomiting at this stage is often marked and troublesome, but does not as a rule persist after the temperature begins to fall. If very distressing it can often be relieved by administering large quantities (a big breakfast cup at a time) of warm fluids, hot water, or weak tea. These help to wash out the stomach and dilute the irritating contents. The administering of plenty of fluids also helps the onset of the sweating stage.

(c) The Sweating Stage.

After a variable interval, generally from two to three hours, the patient begins to feel easier; the head gets lighter, the pains abate, and he breaks into a profuse perspiration. This is the third or sweating stage. The temperature now falls, and the malarial paroxysm is over for the time being, to return, however, if untreated, at the end of twenty-four hours or longer, according to the type of fever.

When the patient begins to perspire is the signal for the commencement of the quinine treatment. If quinine is given at the very onset, that is, in the cold stage, it is too late then for it to arrest the attack, and it is apt to add to the general discomfort and headache. It must not be forgotten, however, that quinine is the only real cure for malaria, and, if the hot stage is unduly prolonged, and the patient shows no sign of beginning to perspire, or his temperature to fall, the sweating stage must not be waited for too long, but quinine administered in full doses without further delay.

As regards the method of giving the drug : Ten grains should be given as the first dose, and after that five grains every six hours, day and night, for about a week, or longer if the temperature has not returned to the normal.

A good rule is that quinine should be given for two full days in the doses mentioned, after the temperature has returned to the normal.

To ascertain this, the temperature should be taken twice daily, night and morning. Normal temperature is 98·4 degrees, and is marked on the thermometer with a little arrow. Every farmer and farmer's wife should know how to take temperatures and read a thermometer, and this can be taught him or her in five minutes by their medical attendant, or by any chemist.

Quinine is best given in solution, as it is more readily absorbed in that form. If the five grain tabloids of the bisulphate of quinine are crushed up, they will be found to dissolve fairly easily in cold water, and quite easily if the water is warmed.

Where the digestion is much upset, and the gastric juices much diminished, quinine tabloids, especially if they are at all old, are apt to be passed unchanged through the bowel. This is frequently the fate of the more common tabloid of sulphate of quinine, especially if it is sugar-coated. Should, however, the distaste of quinine be so great, or should the solution set up vomiting, then the tabloids must be given as they are, and their solution in the stomach can be helped by following them up with a drink of fresh lemon or lime-juice and water.

If quinine is given systematically in the manner described, it will generally be found that the return of the fit or paroxysm is more or less arrested.

The patient's temperature may or may not rise the following day, but it will not be so high as the first time, and in nine cases out of ten will return to the normal by the third or fourth day, if not earlier.

During the sweating stage the patient should be frequently dried and his clothing changed, and all dangers of chill avoided. It is very advisable that the patient should remain in bed for two full days after the temperature has become normal both in the morning and evening.

The diet during the attack should be chiefly fluid, and during convalescence, light and easily digested. Spiced and greasy foods should be avoided.

After Treatment.

As before stated, quinine is to be given in the doses mentioned for the two full days after all fever has disappeared. As there is always a varying degree of anæmia following an attack of malaria, and the patient is generally languid and listless, a tonic should be taken after this for at least a fortnight.

Tabloids of Iron and Arsenic or Blaud's pills with arsenic are both suitable tonics, and convenient to keep. The dose is three tabloids in the day, one to be taken after each meal, that is, after breakfast, dinner and supper.

In order to avoid recurrence of the fever, and also, as far as possible, to check further infection, it is necessary to take quinine for some time afterwards in preventative doses. The best method to adopt is to take 15 grains, divided up into three doses, once a week, preferably on Sunday, as this is a non-working day. This should be kept up for at least six weeks after the last attack of fever. That is, every Sunday 5 grains of quinine should be taken three times in the day.

If this precaution is rigidly adhered to, it will be found that, if further attacks of fever are not absolutely prevented, they, at any rate, will be much less severe in character.

2. CHILDREN.

The treatment of the first and second stages is the same, except that antipyretics, such as antipyrin, phenactin, and antifebrin, must not be administered to children. The bowels must be opened at the start with a mild purgative, such as a dose of castor oil or Gregory's Mixture. The doses of quinine are as follows: For a child under one year, start with one grain and follow with half a grain every six hours, and continue for the same period as an adult. For children over one year, the dose is approximately one grain for every year of life up to four years, and the initial dose for children under ten should not exceed five grains. From four to ten the dose for children is four grains.

Children are found to stand quinine well, and to react to it even more readily than the adults.

An easy way of giving the drug to the very young is to crush it up and give in milk in a teaspoon. The bitter is so intense that it is difficult as a rule to get children

to take quinine, and much tact and patience is required. It must not be forgotten that children are liable to develop coma and convulsions and other types of pernicious malaria if the initial attack is not vigorously treated with quinine.

The after treatment should be on the same lines as in the case of adults. A useful tonic is what is known in all households as Parrish's Food. This should be given in water three times a day. The dose for a child under one year is 10 drops. From one to three years old, one half a teaspoonful; from three to five years and upwards give one teaspoonful. The quinine after treatment should be given once a week the same as in adults, the dose being in accordance with the age of the child.

3. PREGNANT WOMEN.

It is known that quinine in large doses may cause miscarriage or abortion, though it is doubtful if this is as common as is supposed. At any rate full doses of quinine should not be given to a pregnant woman.

Women in this condition should be given five grains for the original dose, and three grains every six hours afterwards. The length of time the treatment should be kept up is the same as in other cases. The quinine after treatment should consist of three grains three times a day once a week. Continued fever is much more likely to bring on miscarriage in a pregnant woman than quinine judiciously administered.

In writing these simple rules on the treatment of malaria for the guidance of farmers and settlers in Rhodesia, it is not my intention that these should supersede medical advice where available. "A little knowledge is a dangerous thing," and there is always the danger that, in giving information of this sort to the public, they are thereby encouraged to avoid the expense of sending for a doctor till they have had a try themselves at curing the disease, and more harm than good is done in consequence. I cannot too strongly impress on my readers that no two persons are alike, and temperaments and cases never agree in all points, and where a doctor is available he should always be called in without delay.

These notes are intended for those on lonely, isolated farms, who may be far distant from the nearest medical man, and perhaps temporarily cut off from him by unfordable rivers, etc., and are meant as a guide to them, so that they can carry out the best treatment available at the time, and till such time as skilled medical assistance can be obtained.

I can say nothing here about the more pernicious forms of malaria, or about its complications and sequelæ; these can only be treated, each case as it occurs, by trained medical men, and if the instructions in these notes are religiously carried out, there is little chance of their ever appearing.

Onion Growing.

By the EDITOR.

By steady persistency and experiment the successful growth of onions as an item of Rhodesian husbandry may now be fairly recognised.

The experimental stage of a few plots yielding samples only has now been succeeded by cultivation in bulk on a profitable scale. A considerable number of farmers are now growing from one to three acres or more each of onions.

The accompanying illustration shows the kind of crop which was grown last year by Messrs. Reid and Tait on the farm Ingleborough, in the Mazoe district.

The soil is a black vegetable loam, medium sandy, is free working, and has an open subsoil. It is under irrigation, since it must be understood that onions can only be grown on a commercial scale as a winter crop. Also the soil must be of a similar nature to that mentioned—be free from binding, fertile, and in a high state of cultivation.

The method Messrs. Reid and Tait pursued was as follows:—

The seed was grown in Natal, a variety obtained through Messrs. Meikle Bros., which gives good results in that Colony.

It was sown in carefully prepared beds in April. Watering with cans twice a day was closely carried out until July, when the young onions, about the size of the point of one's little finger, were ready for planting out.



Photo by]

Onions being reaped at Ingleborough, Mazoe.

[A. Reid.

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The land was thoroughly prepared and laid out for irrigation in beds of convenient width for flooding. The ridge and furrow system where tried failed in giving equal results with flooding on the flat.

On the smooth and level surface in the fine tilth lines were taken off about 14 inches apart, on which a small furrow, less than three inches deep, was made with a hoe.

In this furrow the young onions were planted, and packed firm at just sufficient depth, giving them a good hold, the bulb being rather less than two inches from the surface, the distance between the plants being about 4 or 5 inches. No earthing up around the plants was given, the ground being left on the flat.

The soil was kept stirred and all weeds kept down during the whole period of growth. Irrigation water was given about twice a week throughout.

Towards the end of October the onions were becoming fit for reaping, and early in November the whole crop was ready for disposal. The average size was between two and three to the lb.

One acre yielded 75 bags, and they fetched 50s. per bag in Salisbury, amounting to £187 10s. for a single acre.

The seed cost 30s. per lb., and the boys' labour about £10. About 1 lb. of seed, when it comes up well, is sufficient for planting out an acre.

Cutworms at Bulawayo.

By E. C. CHUBB, Acting Curator, Rhodesia Museum.

A caterpillar belonging to the class generally spoken of as cutworms, has swarmed in Bulawayo and neighbourhood these last two summers. During the month of December, 1907, these caterpillars were to be seen in incredible numbers all over the town.

They ate off most of the grass, and I believe were responsible for a considerable amount of damage to the mealies of farmers and natives near Bulawayo. Although by no means as numerous this season in the town itself, I am informed that the crops and grass belonging to some farmers a little distance out have suffered severely from this pest during the last few months.

This particular cutworm is about an inch long, and is green, with several longitudinal stripes along its back varying from greyish to black.

Examples taken are kept under observation, developed into a *Noctuid* moth—*Laphygma exempla*. They appear to live above ground for a month or six weeks as caterpillars, and then enter the ground to pupate. After a period of two or three weeks, or possibly longer, they emerge as full grown moths.

Although up to the present this cutworm has not occurred in such numbers elsewhere, as far as I know, it is just possible that, given a particularly favourable season, it may increase and spread over large areas of the country, and for this reason farmers should be prepared to deal with it as soon as it makes an appearance among their mealies.

REMEDIAL MEASURES.

These should be the same as are usually employed with other cutworms, viz., the distribution about the lands of bran or chopped green stuff poisoned with some compound of arsenic, and sugar or treacle added to make the bait attractive. For a detailed account of the method of preparation and employment of this poisoned bait the reader is directed to the "Rhodesian Agricultural Journal" for December, 1908, p. 193.

Butter Making.

In our correspondence columns will be found a letter requesting a few hints on butter making as distinct from an article on the subject. We herewith offer the following concise and simple rules issued by the Royal Agricultural Society of England and sold at their demonstrations and competitions held in the Show-ground: —

SIMPLE RULES FOR BUTTER MAKING.

Prepare Churn, Butter Worker, Wooden Hands and Sieve as follows:—

1. Rinse with cold water.
2. Scald with boiling water.
3. Rub thoroughly with salt.
4. Rinse with cold water.

ALWAYS USE A CORRECT THERMOMETER.

The Cream when put into the Churn, and the Churn should both be at a Temperature of 52 to 57 degrees in summer, and 56 to 60 degrees in winter.

The temperature of the atmosphere should decide at which of these figures churning should take place. The warmer the day the lower should be the temperature of the cream and the churn and *vice versa*. The churn should never be more than half full. Churn at number of revolutions suggested by maker of churn. If none are given churn at 40 to 45 revolutions per minute. Always churn slowly at first.

Ventilate the churn freely and frequently during churning, until no air rushes out when the vent is opened. If the cream "goes to sleep" after it has been churned for 25 to 30 minutes, stop churning and wash down the lid and sides of the churn with a small quantity of water at a temperature of from 75 to 80 degrees Fahr. The butter will usually come with a few more revolutions of the churn.

Stop churning immediately the butter comes. This can be ascertained by the sound; or by inspection.

Directly the butter comes, the temperature of the butter and buttermilk in the churn should be taken, in order that the cold water and brine mentioned in the three following paragraphs may be lower in temperature than the butter and buttermilk, otherwise in the washing and brining processes, the butter will not be kept in good grain, but may get into a lump. Butter when churning is properly done, should be like grains of mustard seed.

Pour in a small quantity of cold water (one pint water to two quarts cream) to harden the grains and give a few more turns to the churn gently. Draw off the buttermilk, giving plenty of time for draining. Use a straining cloth placed over a hair sieve so as to prevent any loss, and wash the butter in the churn with plenty of cold water; then draw off the water, and repeat the process 3 or 4 times until the water comes off quite clear.

TO BRINE BUTTER,

make a strong brine, 1 to 3 lbs. of salt to 1 gallon of water. Place straining cloth over mouth of churn, pour in brine, put lid on churn, turn sharply 3 or 4 times, and

then drain off the brine. When a Delaitouse or centrifugal drying machine is used the butter should be taken out of the churn, and put in the bag provided for the purpose, and dried in the machine. Where the water is worked out of the butter on the butter worker only, the butter should be lifted out of the churn into a sieve, turned out on the worker, and allowed to drain for half an hour (that is if the dairy is cool) before being worked.

In both cases, working out the superfluous moisture and not working water into the butter is the object to be attained.

TO DRY SALT BUTTER,

place butter on worker, let it drain 10 to 15 minutes, then work gently till all the butter comes together. Place it on the scales and weigh; then weigh salt, for slight salting $\frac{1}{4}$ oz., medium $\frac{1}{2}$ oz., heavy salting $\frac{3}{4}$ oz. to the lb. of butter. Roll butter out on worker and carefully sprinkle salt over the surface, a little at a time; roll up and repeat until all the salt is used.

N.B.—Never touch the butter with your hands.

Importation of Stock.

SOME METHODS ADOPTED BY OTHER COUNTRIES.

By ALFRED HICKMAN, Egerton, Kent, England.

When some of the diseases which assail live stock imported into Rhodesia are got under by the energetic efforts of those who have taken the matter in hand, it is more than probable that a large trade may grow up in imported live stock from the Old Country. It may therefore interest readers to know the conditions ruling this trade in the many foreign countries and Colonies which are such big customers to the "Stud Farm of the World."

In almost all cases, live stock of any sort has to be accompanied by a certificate signed by the Local Veterinary Authority of the district in which the stock has been kept, stating that they are free from infectious diseases

and that no such diseases have existed in the district for a certain period, generally six or twelve months. Horses and ponies are not kept in quarantine on landing, all other farm live stock is, but the periods vary considerably, nearly every country having different ideas as to what constitutes a safe period. One country, the U.S.A. only imposes 15 days quarantine on sheep, whilst another imposes as long a term as 90 days; this latter seems absurdly excessive as no evil results have yet occurred through the imposition of only 15 days, although the country enforcing it is the largest buyer of pedigree sheep that Great Britain has. The Government of the U.S.A. imposes a quarantine of 30 days on cattle.

There are two great drawbacks to an extensive import trade in the majority of cases, one being the inordinate length of the time that the stock must be in quarantine, and the other the high cost of freightage to those countries served by Steamship Companies which have formed a Combine.

There are two countries which stand out from the others in their efforts to improve their livestock. Pre-eminent among these is Brazil, which refunds to all importers of pedigree stock, half the expenses incurred from the time of purchase till they reach their owner's estate. This is a very liberal and far sighted policy on the part of Brazil, which will no doubt have great results in the future. This regulation has only been in force about 18 months, but the demand for live stock so far has certainly been disappointing. The other country is the U.S.A. who keep a Veterinary Surgeon in England, to apply the tuberculin test to all cattle bought for export to that country. The Government pay the whole of his expenses, so that his certificate of freedom from tuberculosis costs neither the vendor nor the purchaser a penny piece.

Things are very different in the Argentine; importers have their cattle tested here as a precaution, but their Government will not accept these certificates and all the cattle are tested by them in their quarantine stations just after landing, when they are likely to be feverish, or as much out of condition as they have ever been in their lives, the consequence being that cattle are often condemned there, that have passed in England. During the last 3 years, amongst others, one bull, that cost 3,000 guineas and another that cost 500 guineas, have failed to pass; they were

slaughtered, and a post-mortem showed them to be perfectly sound. For any country importing live-stock there is no doubt that the policy adopted by the U.S.A. is the best possible for all concerned.

The Government of every country likely to have a pastoral future, should do all that lies in its power to improve the live stock of that country and should impose the fewest and least irksome restrictions consistent with maintaining the health of their stock.

Hints for Poultry Keepers in Rhodesia.

By "MINORCA."

As many rumours are current just now of considerable losses of poultry through sickness, it appears to me that a few words on the management of birds will not be out of place.

First of all a large number of people are under the impression that there is some disease peculiar to this country which is practically unknown in other parts of the world, but the sooner this fallacy is exploded the better. The fact is the diseases which have appeared locally so far are nothing to what have to be contended with in other parts of the globe. What is known generally as "fowl sickness," is nothing more or less than a form of liver disease, brought on by errors in feeding or indigestion.

Liver disease and roup—with later developments to diphtheric roup—are practically the only diseases which have yet appeared locally to any extent. Such diseases as contagious enteritis and cholera, that carry off large numbers of birds in other parts of the world, are happily almost unknown here. Given reasonable care and attention there is no country in the world more suitable for poultry raising than Southern Rhodesia, and the causes of failure are invariably due to carelessness in some way or other.

Two poultry-keepers came to see me last week complaining of losses, which from the description given, leaves little doubt were attributable to liver disease. I enquired what the birds had been fed on, and in both cases found crushed mealies figured largely in the diet.

Furthermore, neither of these gentlemen had ever considered the necessity of providing their birds with artificial grit. Either of these errors are sufficient in themselves to bring on liver disease. Mealies, whether whole or crushed, are very unsuitable as a diet for fowls in this country by reason of their heating properties. In a hot climate the aim of the poultry-keeper should be to keep the blood of his stock as cool as possible, and anything calculated to heat the blood should be avoided, except in the coldest weather, and even then fed very sparingly, the last thing at night. Mealies can be fed with comparative safety in the cold climate of Great Britain, but are very liable to result disastrously if fed to any extent in Rhodesia.

Many corn merchants in this country make a practice of preparing mixed grain for poultry, but the indiscriminate mixing of many kinds of grain does not necessarily provide a well-balanced ration, and for those poultry-keepers who have not the inclination to study the "balance" of the rations I should strongly recommend in place of this mixed corn, a feed of different varieties on different days. If the mixed corn is fed every day the birds get no change, and a variety of diet is highly desirable. It costs no more to buy the several varieties of grain separately than it does mixed, and it is obviously far better to feed a different variety every day in the week, than seven different varieties every day, and the birds show a keen appreciation of the change. Another point not sufficiently considered in this country is the provision of an adequate supply of green food for the winter months when the birds are unable to find it for themselves. Plenty of green food is absolutely necessary to keep the bowels in good order, and is best fed in the heat of the day, as it has a cooling tendency. Personally I have enclosed about a quarter of an acre with a wire netting fence. Inside this enclosure I have patches of lucerne, red and white clover, lettuce, etc., and in the winter months, when everything is burnt off, the birds are driven into the enclosure for about twenty minutes in the middle of the day, and allowed to pick what they want. These patches are well watered once or twice a week, and the daily cropping keeps them sprouting with the exception of the lettuce, which it is necessary to replant as occasion requires. In addition to this I periodically mix a little Epsom salts with their morning mash.

With regard to providing artificial grit, the average poultry-keeper does not realise the necessity for this course, and is under the impression that the birds can pick up sufficient for their requirements. I have even met poultry-keepers in Salisbury who were unaware that grit was necessary for a fowl. Now, to understand why grit is absolutely necessary, it must be explained, for the benefit of those who have not studied the subject, what the action of the grit really is. Everyone has seen the gizzard of a fowl, and will have observed that it is a muscular organ, corrugated on the inside. When grit is swallowed it passes into the gizzard and is therein retained for the purpose of grinding the grain, under the muscular action of the gizzard, before being assimilated into the system. It will, therefore, be obvious that the harder and sharper the grit, the better will the operation be performed. The grit, by constant wear, is also assimilated into the system and provides the bird with certain necessary mineral salts.

A fowl kept without grit is in exactly the same position as a man without teeth, and indigestion is inevitable. Now indigestion is one of the primary causes of liver disease in poultry. Furthermore, it will be obvious that if the food swallowed by a fowl is not properly digested, a proportion of the egg-forming constituents contained therein will be wasted; it follows, therefore, that a supply of good hard grit is conducive to increased egg production. Sand is useless as a substitute; it is neither large enough nor hard enough. The proper sized grit for a full-grown fowl is about the size of a pea, and angular and sharp as possible.

I have noticed some people hammering up broken china for the use of the birds; this is a highly dangerous proceeding, as a lot of glazed china contains dangerous chemicals, and is very likely to do the birds serious injury. There is plenty of hard white quartz and flint to be found, which can easily be pounded up to a suitable size.

There is one thing we have to contend with in this country which poultry-keepers are not troubled with to the same extent at home, i.e., sand fleas, and considerable care and watchfulness is necessary to keep down these pests. If a large flock of birds is once allowed to become infested it will be no easy matter to get rid of these fleas. Thorough cleanliness is therefore absolutely essential. My houses are all swept out clean daily, and once a week

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[C. E. F. Allen.]

Dalbergia Sissoo. At Experimental Nursery, Salisbury.

Photo by]

they are thoroughly watered with strong sheep dip early in the morning, to allow them to dry well before the birds go to roost at night; when thoroughly dry the floors are thickly sprinkled with lime. Each house is provided with a dust bath, composed of a mixture of dust, ashes, and lime, with a little Keating's powder and flowers of sulphur added, the whole placed in a box large enough for a bird to dust itself in.

Even with these precautions I occasionally find a bird with a few fleas firmly attached to the eyelids, or under the throat. There is nothing better for removing these than a little vaseline with paraffin and sulphur rubbed into the parts affected.

A periodical inspection of all birds is necessary to prevent vermin getting well established before being noticed. This is best done in the evening after the birds have gone to roost, when a tour can be made with a lantern and the birds examined individually.

If the simple rules suggested in this paper are attended to systematically it will be found that not so much labour is involved as appears on the face of it. I contend that with poultry and eggs at the prices they are, there is a sufficiently large margin of profit attached to poultry keeping to pay for any extra care and attention, and I am certain the observance of these rules will do away with a large percentage of losses through sickness, assuming that the birds are rationally housed.

In conclusion, I should like to impress upon the farming fraternity the fact that for the amount of capital expended and labour involved, there are very few branches of farming which prove more remunerative than poultry-keeping, and considering the number of eggs imported into Southern Rhodesia annually, there is little chance of the supply exceeding the demand.

Dalbergia Sissoo.

By C. E. F. ALLEN.

At the Experimental Nursery, Salisbury, this tree has made excellent growth. Trees planted four years ago are now from 10 to 15 feet high. The long drought of last year had no bad effect on the growth. White ants

do not appear to molest it. It thrives on a rich soil moderately well drained, but it will probably be found to thrive equally well in sandy districts. Close planting, 4 ft. x 4 ft., is recommended. The accompanying illustration will give some idea of the fine growth made by this tree in Rhodesia.

In its home in the Himalayas the Sissoo develops into a large tree, and extensive plantations have been made with it in India.

The wood is described as durable, with white sap-wood, brown heart-wood, close and even grained, seasons well, and is hard. It is used for railway sleepers, cart-wheels, boat building and furniture of all descriptions.

A Word on Weeds.

By JAMES WADDELL, of Pentland, Mazoe.

“One year’s seeding is seven years weeding.”
—(Old Saw.)

It is not generally realised how important is the relation weeds bear to the farming industry. The farmer’s life may almost be described as a constant war with them, and his success or failure depends largely on the result of these campaigns. Nine-tenths of all the farm tools and implements are used mainly as weapons in that great warfare. Ploughs, harrows, cultivators, badsas—incidentally they may be used for cultivation, but barring the ploughing of stubble, how much cultivating would be done if weeds did not render it necessary? Nature seems to abhor a vacant piece of fertile land. Even the dumps from prospecting shafts, miles from any cultivated land, soon bear luxuriant crops of black jacks. It is not surprising, therefore, that as soon as new land becomes mellow enough for farm crops, weeds also spring up.

Taking into account the difficulties of the present-day farmers, armed as they are with all that science and mechanical art can give them, we can understand more fully the grim struggle constantly taking place between primitive man and the forces of nature. Scratch the soil

and weeds will grow. Nature will provide the seed. If only requires the labour of man to uproot the grass when soon other growths speedily cover the spot.

To some extent the Mashona solves the weed problem by burning his fields. A patch properly burned is said to bear three crops without becoming unduly infested with weeds. After the third crop, if weeds are becoming obtrusive, and if there is more bush land available the owner may consider it good policy to abandon the old field and set about preparing a new one. When we find that a large amount of labour is thus undertaken, solely with the object of avoiding weeds, it becomes obvious that thorns and thistles are of the gravest significance; and that it is only by the sweat of the brow that food can be wrested from the ground.

Farmers sometimes wish to know when it is going to be possible to take things easy, and have a good time. To this query there can only be one answer—when wear and tear ceases and weeds no longer grow. The old dictum: "He that by the plough would thrive, himself must either hold or drive," may be modified a little when applied to Rhodesia, in so far as actual driving is concerned. But the great truth holds as rigidly here as elsewhere. Constant vigilance, close supervision of labour, and attention to small matters, these the farmer must bring to bear in his business at all times.

As already indicated nearly all cultivation has for its object the prevention or destruction of weeds; or, to put it differently, the fact that weeds are growing, or will grow, is always a powerful incentive to cultivate. They thus render cultivation necessary, and cultivation increases the crop, but woe betide the man that fails to clear the weeds away.

It can also be said in favour of weeds, that to a certain extent they prevent the exhaustion of soils. I need not go fully into this matter, but farming experience could bear me out in the statement that immense quantities of vegetable matter in the shape of weeds are ploughed in or otherwise returned to the soil year by year. This, coupled with the fact that farm land is not losing its fertility in spite of continuous grain cropping, is significant.

When weeds have been so far reduced in numbers and size that not a pound of mealies has been lost through their presence, and when not a blank is observable in the

rows of mealies in harvest time, perfection has been pretty nearly attained. But as that ideal state could only be reached by drastic cutting down of acreage, and might prove unpayable in practice, it is hardly likely that farmers will set their standards so high.

Having indicated much that is harmful in weeds, in order to conform to the usual commendable practice of journal writers, I ought now to unfold a scheme for their eradication. With much regret, however, I acknowledge myself unable to do anything of the kind. No doubt every farmer in the country is doing all he possibly can to keep his lands clean, and that the most up-to-date methods and implements are being used.

Science has done a good deal for agriculture, but Science has its limitations. In the matter of weed-eradication she has given us not very much, and in the matter of cutworms nothing at all. Yet weeds and cutworms diminish the mealie output probably quite 50 per cent. every season. Again, while we all maintain our climate to be the best in the world, it is an unfortunate fact that the wettest periods usually occur when cultivation is most necessary, and cultivation and pouring rains are an "ill-matched pair."

Since Nature thus hinders the farmer in his efforts, and Science aids him but feebly, the one solution of the difficulty is doubtless—labour.

But, unfortunately, during the period that weeds might be most easily destroyed the supply of labour is at its lowest ebb. Happily, indications are not wanting that this condition of things is about to cease.

Notes.

ABERDEEN-ANGUS AND ITS CROSSES.

It may be of interest to those who have recently imported sires of this breed into Rhodesia to know that the outstanding feature of the past fat stock show season in Great Britain was the remarkable success of animals of the Aberdeen-Angus breed, and crosses of that breed. In no year has the round of the shows brought out more strongly the superiority of Aberdeen-Angus blood in beef

production than in the season just closed, during the course of which the breed and its crosses achieved a record which is altogether unique in the history of cattle breeding.

At the Birmingham Fat Stock Show an analysis of the cross-bred classes revealed the marked superiority in numbers and in quality of the Aberdeen-Angus-Short-horn cross. It was remarkable that the whole of the prizes went to animals having Aberdeen-Angus blood in their veins.

At the London Smithfield Show, the championship for the best animal in the show was awarded to an Aberdeen-Angus heifer, the reserve being by an Aberdeen-Angus sire.

The popularity of the cross showing Aberdeen-Angus lines of breeding was shown by the fact that of the forty entries, thirty represented Shorthorn and Aberdeen-Angus lines of breeding, and five combined Aberdeen-Angus and Devon blood. It will thus be seen that Aberdeen-Angus blood was the most largely represented, cropping up in thirty-six out of the forty animals, and appearing in combination with three different breeds.—("Banffshire Journal.")

On Mr. L. Black's farm, Stapleford, the Tobacco crop this year more than maintains the high grade of former years. The Turkish tobacco in particular shows a leaf having fine colour and texture, while the yield is far above the average; a field of ten acres is giving a return approaching 1,000 lbs. per acre of most beautiful quality.

Virginian tobacco occupies a field of about 14 acres, the return per acre being also highly satisfactory both in quantity and quality.

Cutworms on this farm did a very great amount of damage to the young plants, both in the seed beds and when planted out, the acreage being thereby reduced below the breadth of land that was prepared.

Apart from cutworms the tobacco crop this year has had a very healthy growth, no disease or other injury affecting the proper ripening of the leaf.

The Turkish tobacco grown on this farm is utilised solely for the manufacture of Stapleford cigarettes, and when this season's crop is matured the cigarettes therefrom will doubtless promote into further favour Rhodesian-grown and manufactured cigarettes.

On the farm Homefield, Mr. Butchart has grown 10 or 12 acres of Virginian tobacco, which has also yielded a magnificent crop.

Mr. Butchart has erected a large flue curing barn, in which he has already commenced curing the leaf, the tobacco harvest this year being quite a month earlier than usual.

It is unfortunate that so many farmers throughout the country gave up growing tobacco this season, since in every case where it has been planted the yield and quality has been above the average.

The prize list of the 11th Annual Show, held by the Rhodesian Agricultural and Horticultural Society has now been issued. The Show is to be held within the Society's grounds in Salisbury on June 27th and 28th.

There are 377 Classes of Exhibits for which prizes are offered, of which 129 are classes for farm live stock.

A Challenge Cup, value 50 guineas, and also Gold Medal, is presented by the Society for the best bull in the showyard (Cup to be held for one year). There are besides 10 Silver Cups presented by donors for special prizes in the Cattle section.

Two Silver Cups are presented by donors for the Horse section; two Silver Cups in the Sheep section; one Silver Cup and Special Prize in the Poultry section; three Silver Cups and Special Prize in the Dairy section; Silver Cup and Special Prize in the Produce section, and Special Prize which also includes the Tobacco section.

Silver Medals are awarded in the classes for Implements, Dairy Appliances and Farm and Garden Seeds.

On account of the absence of stock diseases in the country, and the large number of well-bred animals imported during recent years, coupled with the excellent grass season and the fine condition of stock, there promises to be a great increase in the entries for the 1909 Show.

In all other sections it is reasonable to expect that a marked increase will be manifested, reflecting the general advancement which has been conspicuously made during the past season.

All entries must be in the hands of the Secretary, Mr. W. H. Williamson, Box 288, Salisbury, not later than June 14th.

N.B.—In the Sheep section the conditions of entry, stating that, “exhibits must have been in the possession of exhibitor at least three months before the date of the Show,” has been deleted.

Arrangements are being made with the Railway Authorities for the usual Reduced Rates for passengers, and for the conveyance of exhibits to and from the Show.

The Bulawayo Agricultural Society have issued the Prize List for the forthcoming Show, to be held at Bulawayo on the 16th and 17th June.

Prizes are offered among 380 classes, 83 of which are for farm live stock. Special prizes will be awarded, comprising the fourfooted, and the Poultry and Produce sections, the highest aggregate of the whole to be taken.

A new and interesting feature in the Cattle section is the Rhodesian Breeders' Sub-section, which is introduced for the purpose of showing the effects of “grading.”

Classes are provided for cross bred Shorthorn, Hereford, Devon, Aberdeen-Angus and Friesland heifers, sired by a pure-bred bull of any of these breeds. The breed of the dam is immaterial, but must be stated on the entry form.

The Produce sections include a comprehensive variety of all the different locally-grown Rhodesian Products embracing cereals and root crops, cotton and tobacco, fruit and vegetables.

Implements, machinery and vehicles are an important section.

Competitions cover a wide range, and are especially attractive.

The Bulawayo Show for 1909 apparently will prove a still further advance over the highly creditable shows held previously.

All entries should be in the hands of the Secretary, Mr. E. L. Loosley, Box 500, Bulawayo, not later than Tuesday, June 8th.

Arrangements are being made with the Railway Authorities for the usual Reduced Rates for passengers, and for the conveyance of exhibits to and from the Show. A Special Excursion Train is to be arranged for with the Cape and Rhodesia Railways, to run to Bulawayo.

Publications obtained at the Agricultural Department, Salisbury:—

“Tree Culture in Southern Rhodesia.” By P. B. S. Wrey, A.M.I.C.E. Price 9d.

“Farm Science.” Issued by the Harvester Co., of America. Price 3d.

A complete file of “The Rhodesian Agricultural Journal” since its commencement; particulars regarding sale of which may be obtained from the Editor.

Copies of “Money in Lucerne” may be obtained from the Agricultural Department, Salisbury, at the price of 1s. each; remittance to accompany order.

Tobacco Plantations Co.'s Estates, Hunyani.

By the EDITOR.

The past season has proved highly favourable for growing good tobacco on all the farms comprising the Estates.

On Warwickshire and Sublime, about 80 acres of Virginian tobacco have been grown, producing a crop averaging about 600 lbs. per acre. The quality this year is also excellent, the rains coming so evenly and uniformly distributed causing a continuous and unchecked growth of the plants. The quality of the Virginian leaf this year is considered the finest hitherto produced.

The tobacco was planted out chiefly in December, partly by machine and partly by hand labour, at the distance of three feet between the rows and two feet between the plants. After planting out, Cape Government



Photo by]

Field of Tobacco, Tobacco Plantations Company's Farm, Sublime.

[E. H. South.

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Photo by

Tobacco on Tobacco Plantations Company's Farm, Sublime.

[E. H. South.

guano was applied to the land at the rate of 200 lbs. per acre. This manure was first tried the previous year, and it has now proved the most successful among all the different forms of manure that have been put under trial in increasing the yield together with maintaining the fineness of leaf.

Cultivation between the rows was assiduously performed throughout the whole of the growing period. One field of 52 acres shows a magnificent crop, in straight rows, the ground loose on the surface and scarcely a weed to be seen.

On a field of 20 acres on Sublime cutworms made their appearance in vast numbers, necessitating repeated re-planting, while only about one half the plants have survived. Cutworms have been the most serious pest this year, no other insect or blight having appeared doing damage, and the crop is being reaped in the very best condition.

The reaping season has been commenced this year six weeks earlier than usual. Flue curing is now in full swing, and carried on without break in two large barns, where the keenest watchfulness is bestowed on the process both night and day.

On the farm Kent, about 150 acres were planted by hand labour, the varieties being Hestor and Goldfinder. Cutworms on this farm were even more destructive than at Sublime. On some fields re-planting was done five times. Altogether about 50 acres have been lost through this pest, besides 50 acres more land that had been prepared and had to be left alone for want of plants.

The extra work involved in fighting cutworms can be gathered when it is understood that the whole 150 acres were on an average planted twice. Since 6,600 plants are required for one acre planted once, the planting out of 150 acres twice required no less than two millions of plants to be raised in beds and planted out.

About 130 boys were employed under the supervision of two white men.

The crop on about 100 acres of this farm is of most excellent quality, and the yield is rather more per acre than on the other farms.

At Warwickshire the leaf is manufactured as it matures into several different smoking and cigarette mixtures

which are gradually gaining a name as a first-class production, from a Rhodesian industry wholly carried out within the country, even the tins being made in Salisbury.

On a part of Kent farm 60 acres of maize were planted with pedigree seed obtained from the Agricultural Department. The crop has grown magnificently, and promises a very large yield per acre.

As no other variety of maize is on the farm, and no maize growing within miles, a very pure and uncrossed sample should result, affording a good supply of seed.

The methodical way in which the work on this Estate is carried on, and the success which has attended the growing, curing and manufacture of tobacco, reflects the very highest credit on Mr. South, the manager, and on the staff belonging to the establishment.

Rhodesian Agricultural Union.

NOTICE TO FARMERS.

All members of Farmers' Associations throughout Rhodesia requiring native farm labourers are requested to fill in the accompanying Form, and to return it to me by post without delay.

His Honour the Administrator has arranged with the Governor of Nyasaland for the collection and forwarding of a large number of natives (now being engaged specially for farm work) from Nyasaland.

Arrangements have also been completed for the collection, forwarding and distribution of natives wishing to work on farms, from North-Eastern Rhodesia and North-Western Rhodesia.

The terms are as follows:—

NYASALAND FARM LABOURERS.—Twelve months' service at wages of 10s. for six months and 12s. 6d. for balance of term of service.

NORTH-EASTERN RHODESIAN FARM LABOURERS.—Twelve months' service at wages of 10s. for six months and 12s. 6d. for balance of term of service.

NORTH-WESTERN RHODESIAN FARM LABOURERS.—Nine months' service (minimum) at wages of: Adults, 10s. for first three months, 12s. 6d. for second three months, 15s.



Photo by |

Flue Curing Barn, Tobacco Plantations Company's Farm, Sublime.

| E. H. South.

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for balance of term of service; young boys, 5s. for first three months, 7s. 6d. for second three months, 10s. for balance of term of service.

Other terms and conditions will be as prescribed by the Government—approximately similar to last year's conditions.

Native quarters for all northern natives will be inspected and approved by Government before delivery of natives to farmers. This regulation has been made by Government in the interests of farmers, as well as in the interests of natives—to ensure, as far as is possible, the good health of the labourers, and a certain and continuous supply of farm labour from the north for the future. Farmers will, therefore, specially note this most definite requirement, and provide at once warm weather-proof huts, in number sufficient to accommodate all the labour required, without overcrowding.

The cost to farmers will be:—

NYASALAND LABOURERS.—Delivered to farmers at Hartley or Salisbury, including cost of return journey to Nyasaland at end of period of twelve months' service, £1 10s. each labourer.

NORTH-EASTERN RHODESIAN LABOURERS.—Delivered to farmers at Hartley or Salisbury, including cost of return journey home at end of period of twelve months' service, £1 10s. each labourer, plus cost of blankets and jersey advanced to boy, repaid by farmer at end of six months' service. Cost of delivery by rail or messenger at other points will be additional, if required by farmer.

NORTH-WESTERN RHODESIAN LABOURERS.—Delivered to farmers at Bulawayo, through the Rhodesian Native Labour Bureau: *Ex* Kalomo, £1 18s. 6d. each labourer, plus Union charge 2s. 6d., £2 1s. *Ex* Livingstone, £1 15s. 6d. each labourer, plus Union charge 2s. 6d., £1 18s. The cost of blanket and jersey (total 5s.) advanced to natives in North-Western Rhodesia to be refunded by the farmer.

The above will be the total cost to the farmer, if delivery is taken at Bulawayo on arrival of boys, and includes rail fares from Kalomo and Livingstone to Bulawayo, and return rail fares from Bulawayo to Kalomo and Livingstone at expiration of period of service.

Should the farmer wish natives delivered by rail or messenger in outside districts of Matabeleland, he must pay the extra cost.

Should a lower scale of rail fares be obtained—which is probable—the difference will be refunded to farmers.

The charges as above must be paid to the Rhodesian Agricultural Union or their authorised agents before delivery of labourers to farmers.

A deposit of 10s. for each labourer applied for to be made with application and the balance on or before delivery.

Farmers must advise where the delivery of natives is desired.

The first gang of Nyasa natives will arrive at Hartley or Salisbury about the end of April. Small numbers of N.E. Rhodesia and N.W. Rhodesia natives are arriving earlier.

Yours faithfully,

J. S. LOOSLEY,, Secretary,
Rhodesian Agricultural Union.

Weather Bureau.

AGRICULTURAL DEPARTMENT.

Summary of Rainfall for the months dated September 1st, 1908, to February 28th, 1909, at twenty-one Stations in Southern Rhodesia:—

Name of Station.	January.	February.	Total for six months.
MASHONALAND—			
Chishawasha	11'12	8'51	38'68
Enkeldoorn	8'62	4'59	24'14
Gadzema (Giant Mine)	11'24	7'62	29'93
Hartley	12'68	7'32	31'31
Helvetia (S. Melsetter)	16'45	18'11	51'49
Inyanga	12'35	7'89	28'81
Marandellas	10'15	5'35	24'51
Mount Darwin	8'51	8'06	33'37
Penhalonga (Umtali)	14'45	11'61	39'21
Sinoia	9'13	4'43	28'76
Salisbury	8'54	6'16	34'73
Victoria	7'71	4'13	22'45
MATABELELAND—			
Bulawayo	12'23	2'79	24'21
Filabusi	10'16	4'51	23'45
Fort Rixon	5'67	1'26	15'64
Gwelo... ..	7'07	4'72	24'27
Hope Fountain	14'39	2'49	25'20
Matopo Park... ..	9'85	2'73	17'96
Nyamandhlovu	9'81	1'90	22'09
Tegwani	10'27	2'18	25'53
Victoria Falls	9'37	4'02	24'71

REMARKS.

The recorded rains of six months for the twenty-one Stations here published are, for the Mashonaland Stations, almost equal to the normal yearly rainfall.

Helvetia, S. Melsetter, records the greatest amount of rain for the period. During January and February rain was registered at this Station every day, which for a consecutive period constitutes a record.

The southern part of the country, however, suffers with Matabeleland in being rather under the average, notwithstanding that the January rains were abnormally heavy.

It has of course to be reckoned that more or less rain is still likely to come, and if so the figures at the end of the season may be above normal.

At the Observatory, Bulawayo, the total of 12'23 inches during the month of January is the highest reached since 1896 at this Station.

At Hope Fountain the figures recorded are still higher for the same month, viz., 14'39 inches. Since 1898 at this Station the instance that comes nearest these figures is in January, 1900, when 11'39 inches were recorded.

Exceptionally heavy rains have been reported falling throughout South Africa since December. At Johannesburg the downpour has been unusually heavy.

(Sgd.) C. E. F. ALLEN,

Officer in Charge Weather Bureau.

Farm and Garden Calendar.

This month must be taken advantage of to the utmost in sowing wheat and winter forage crops.

Breaking up new land should be pursued at this season in order to get as much as possible turned over before drought sets in making the land too hard. Close and repeated harrowing should follow immediately after ploughing in order to close up the soil and prevent undue loss of moisture.

Fire breaks should be ploughed about 12 feet wide in certain lines calculated to arrest the progress of fires

through the grazing lands on the farm. Ploughing fire breaks is in most cases preferable to taking the risk of burning fire lines at a later period of the season.

The harvesting of the maize crop will be started on most farms during this month. It is at the beginning of harvest that the best selection of maize cobs for seed can be obtained. By personally examining the standing crop a farmer in passing along the rows can select the individual cobs that best conform to the standard he has in his mind.

Uniformity in ripening should be looked for and also equality in the height at which the cob springs from the stalk. Cobs that grow high up on the stalk are longer in ripening than those lower down. Cobs that grow low down near the base of the stalk ripen earliest. Hence when both are mixed, the seed carries with it a tendency to unevenness in the ripening of the next season's crop. Thus cobs should be selected that are found growing at a medium height, on thick strong stalks, and as nearly the same relative distance from the base of the stalk as can be judged.

About 12 cobs plant an acre, so it cannot be considered an undue labour to collect the requisite number for planting even a large farm, including a liberal margin for subsequent closer inspection and probable rejection.

The cobs should be hung up to get thoroughly dry and afterwards put in bags and hung up with wires to the rafters in such a way that vermin may not touch them. The shelling of seed maize should be done by hand, the tips and butts being rejected, more particularly for machine planting.

Selecting the best cobs from the crib before passing through the sheller is only a partial method of selecting seed.

The work of harvesting the crop is conducted under various methods, harvesting by machines being hardly yet undertaken except in a few instances. A common method is to take four rows, each row being taken by a boy who husks each cob and twists it off,—throwing it on to a heap formed between the two middle rows, comprising all the cobs within a convenient distance—when further heaps are made up in the same way. Afterwards the heaps of cobs are put into bags and carried by waggon to the crib where they remain until ready for shelling.

Cribs should in all cases be raised at least 18 in. above the ground, supported on strong beams resting on stout uprights. Native timber only is required. Such a maize crib is far preferable to a merely levelled piece of ground, whereon much wastage occurs through mixing with sand and other rubbish.

LIVE STOCK.

The pastures being still good, all stock will get into the very best condition during this month.

It is about this season when stock breeders should consider the advisability of segregating the bulls from the cows and heifers composing the herd. In a general way, calves born before the new year have a better chance of coming through the winter in good condition than those born afterwards. If the bulls remain with the cows longer than April the calves will be coming from January onwards. It is better policy to let a cow miss one season in order that the best calving time should be under control for the next.

MAY.

During the first part of this month, wheat and forage crops under irrigation may yet be sown in damp loams that may have been too wet for being worked earlier.

The harvesting of the maize crop will occupy the whole of the month and should be pursued as rapidly as possible with all the available labour. The lands should be gone through frequently in advance of the reapers and all cobs removed from the stalks that have fallen down, thus saving them from being destroyed by white ants.

LIVE STOCK.

At this season the water supply for stock should be looked to, that cattle are not drinking continuously from muddy and stagnant pools that are now gradually drying up. A supply of fresh clean water for stock is indispensable, and should be obtained by seeking it under the most available means.

On most farms the pastures will still be tolerably good, and little feeding will yet be necessary for grown animals. Cattle under two years and also calves should be looked after and if showing signs of falling off should be given a few hours among the mealie stalks to begin with.

It will perhaps come to be found that the most economical method of utilising the mealie stalks will be by cutting and stacking them and afterwards dealing them out to the stock in a regulated supply, either shredded or long. However when eaten on the ground, some attention ought to be paid to the manner of consumption that the herd of cattle may not roam over entire fields wasting and tramping down the greater part, while picking out only the best. As far as possible cattle at first should be given only limited portions of the field, thereby consuming more fully as they go along.

SHEEP.

This is a suitable month for putting tups among the breeding ewes as the lambs will then begin coming in October. The exact period should be chosen suitable for the veld in the district, but generally May is early enough that the ewes on lambing may have sufficient pasture to keep them in milk.

Potatoes will be ready for lifting this month when they should be taken up and dried a little in the air, and afterwards stored in boxes or bags in a cool shed until disposed of. Plenty of air space should be left between the bags or boxes.

The practice of leaving them in the ground through the winter months has the disadvantage that the insect pests such as the potato tuber moth, gain a lodgment inside the tuber in greater numbers and cause a far greater loss than when the crop is removed.

JUNE.

Shelling the maize crop will be the chief work during this month. Farmers should endeavour to furnish as good a grade of maize as possible, and all badly matured and deformed cobs should be picked out and shelled by themselves for feeding purposes on the farm. A good sample of maize is an object to be striven for as doing credit to Rhodesian agriculture.

LIVE STOCK.

It is during this and the following months that the care of live stock needs particular supervision and attention.

As the nights begin to get cold, shelter is required that cattle may not lose condition rapidly. It is better to begin with feeding and shelter early that condition may be maintained and kept up rather than let cattle begin falling away into a state from which it is difficult for them to recover.

No sowing or planting is done during this month since growth has ceased to be active. It is the time of realization of the past season's products.

Agricultural shows being all held during this month farmers will have a busy time in selecting and preparing exhibits and giving their personal attendance thereat.

June is the best season for cutting native wood for farm purposes, since it is the season when the sap has ceased to flow.

Correspondence.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Salisbury, 24th February, 1909.

DEAR SIR,—

I wonder if I may venture to make a few suggestions for an article in your "Journal"?

There are a great number of women living on farms in this country to whom farm life is quite a new experience—women who know practically nothing of the work which falls to their lot, and who, with the best intentions in the world, make the most pitiful mistakes. I refer in particular to the making of bread and the preparations necessary to make butter keep, so that when a scarcity of milk happens on a farm it will not be necessary to buy butter.

Could you possibly in one of your numbers, when space permits, start a correspondence dealing with these matters:—

Bread: (1) The making of yeast. (2) How to know when the yeast is fit for use. (3) How to make bread.

Butter: (1) How long must cream be kept? (2) How to salt butter. (Ingredients and correct quantities to each pound of butter.)

I might add that I have read heaps of articles on both these subjects. What I particularly want is other folks' experience in this country where the same conditions prevail.—Thanking you in anticipation, I am, etc.,

Yours faithfully,

A FARMER'S WIFE.

[In reply to our correspondent's request, an article dealing with butter will be found on another page. Comment from this with local experience is invited. Will some reader kindly advise on the bread question, which is somewhat beyond the ken of this Office:—Ed.]

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Lone Cow Estate, Ayrshire,
February 23rd, 1909.

SIR,—

Could any of the subscribers of the "Journal" who may have planted saltbush be able to inform me as to the advisability of planting some, and whether it might possibly become a substitute for a salt-lick?

I am, etc.,

R.B.

[Saltbushes (*Atriplex semibaccata*, *A. halimoides* and others) grow well and are very useful as a saline feed for stock on land too brack or alkaline to allow ordinary vegetation, grasses and so on, to flourish. On such bare spots it is sufficient to sow the seed in well-hoed patches, whence, if protected during the first season, they will spread rapidly, as the salt bushes seed abundantly. But it is no use sowing saltbush on ordinary land, where there are no signs of alkalinity. Such ground is frequent in the south, especially in the Karoo and in Bechuanaland, but rare in the settled parts of Rhodesia. In order to avoid difficulties that arise in growing directly from seed, it might be advisable to sow the saltbush seed in beds or boxes, and afterwards plant out. It will be necessary to protect it from hares, etc., during the first year.—Ed.]

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Mount Shannon,
Salisbury, Rhodesia.

DEAR SIR,—

Permit me to correct an error in your "Editorial Notes" in the current number of your "Journal."

The two bulls imported by me from England were not one a South Devon and one a Red Lincoln, but both are Red Lincoln Shorthorns I got from Mr. John Evans, at Burton, near Lincoln.

May I add, for the encouragement of others, that both have successfully got through their attack of redwater.

I am, etc.,

GERALD FITZGIBBON.

WHEAT UNIRRIGATED.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Hillingdon Farm, Selukwe,
January 22nd, 1909.

SIR,—

In September last we sent Mr. Ross Townsend a couple of ears of wheat from a small patch at the end of last season, grown without irrigation or a drop of rain, which we had tried as an experiment.

At his suggestion we are sending a short account of cultivation and growth.

The soil is a dark sandy loam, with a clayey, decomposed granite sub-soil, which holds a fairly liberal supply of moisture. This land was first broken up in 1905, and had grown two crops of mealies and one of potatoes. The potatoes were planted in September, 1907, and dug in January, 1908. The land was ploughed in March and well harrowed down. Through a delay in getting the seed, and thinking we might get rain, the grain was not sown until the 27th of April. It was sown broadcast and well harrowed in, and not touched again.

The stand was very thin, but what did start stooled out well, as many as twenty-four ears of corn being found on one stool. It ripened uniformly, and was reaped in September.

Although the return we got was small, and barely covered the cost of growing, yet we think it possible, by paying more attention to getting the soil into the best condition, to grow wheat to some profit. Say, growing a crop of early potatoes on old rice lands that have been well worked, the potatoes to be well manured with kraal manure, and lifted in January. The land to be deeply ploughed in February, and well harrowed and rolled, and sowing of course as early as possible. Drilling would be preferable to broadcasting, since the seed would be at a more uniform depth. It should be put in at three inches deep. A set of light harrows should be run over as soon as the stand is well established, to keep down weeds and keep a nice mulch.

We are enclosing a photograph of the different varieties, by which you will see the crop was very much mixed.

We intend growing two acres on similar land as the above, from selected seed, and will drill in about the first week in March.

We are, etc.,

H. & W. J. LONG.

LUCERNE AT INYANGA.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Inyanga, March 13th, 1909.

DEAR SIR,—

In the last "Journal" I was interested in reading the articles on lucerne-growing, and I now send you some notes giving my experience here.

I have three lots of one acre each in separate fields. One lot is just two years sown, and it is keeping a stable of ten horses going, the lucerne being cut and given as green feed. I apply fowl manure to this lot, saving it every day until a couple of bags are filled, when it is taken and spread between the rows with good effects on the plot.

The second lot was sown on a river flat consisting of a sandy loam soil which was first heavily manured with stable manure. It was sown on October 7th, and was cut for the first time on February 16th, and is now doing well.

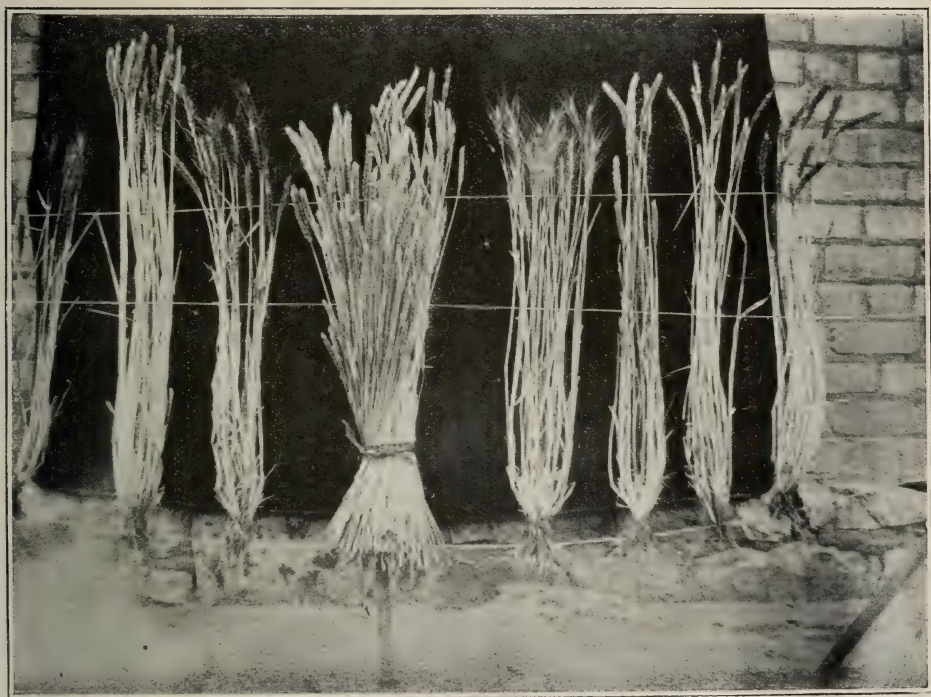


Photo by]

[H. & W. J. Long.

Wheat Stools and Sheaf grown without irrigation as a winter crop
at Hillingden, Selukwe.

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The third lot was sown on a poor piece of ground on December 18th. The land received a good dressing of lime and was then ploughed. The lucerne is looking well, and was cut for the first time on March 1st.

In my opinion the important points in growing lucerne are: That it should be sown in drills, and during the first wet season it should be constantly cultivated to keep down weeds, etc. After the first year's growth, when it is strong enough, the harrows should be run over it frequently during the rainy season.

I am, etc.,

FRED. E. WIENHOLT.

Epitome of Cattle Inspectors' Returns.

DECEMBER, 1908.

SALISBURY.

With the exception of one case of Rabies, there have been no reports of disease in the district.

BULAWAYO.

No outbreaks of contagious disease have been reported for the month, and the cattle at the old infected area at Mzingwane still continue healthy. Several horses died of horse-sickness.

The following animals have been treated with Mallein for Glanders upon entry, and found healthy:—Horses, 21; mules, 62; donkeys, 132; total, 215.

UMTALI.

African Coast Fever.

During the month the remainder of the Hondi Valley infected herd, 22 head in all, were destroyed. All infected herds have now been dealt with, either by slaughter or removal to clean veld, and no sick or susceptible cattle remain in any of the infected centres, which are guarded by Police.

GWELO.

No outbreaks of contagious disease. The test of the African Coast Fever Quarantine Area is proceeding satisfactorily. White Scour in calves caused a number of deaths.

VICTORIA.

Excepting a case of Rabies and Scab amongst native small stock, this district is free from disease. The cattle on the old Coast Fever area remain healthy. Three deaths from Horsesickness reported.

ENKELDOORN.

Two cases of Rabies reported; seven dogs destroyed.

MELSETTER, MAZOE, INSIZA, HARTLEY,
MANGWE, WANKIE, GWANDA, BUBI,
SHILOH, LOMAGUNDI, MREWAS, AND
MARANDELLA.

All these districts are free of disease.

JANUARY, 1909.

BULAWAYO.

Rabies.

One rabid dog destroyed on 15th January. This animal was bitten in Salisbury on 23rd October by a rabid dog, and was kept under observation until about 7th January, when it was released and allowed to proceed to Bulawayo.

Glanders.

The following animals were tested with Mallein and found healthy:— Horses, 11; Donkeys, 34; Mules, 62; total, 107.

MZINGWANE.

African Coast Fever.

The cattle in the temperature camp remain healthy. It is now over 12 months since the last case of the disease.

INSIZA.

No contagious disease. Two horses and a mule died of Horse Sickness.

UMTALI.

African Coast Fever.

Fresh outbreaks none. Existing outbreaks: One calf born of a salted cow on the Forrest Farm developed the disease and was destroyed, as also were four other calves on the same area.

Horse Sickness.

The deaths of one horse and 6 mules was reported. One horse recovered. One of the mules had been inoculated.

Vegetable Poisoning.

At a farm near Umtali three cows developed the following symptoms:—Giddiness, swaying of the hind legs, decrease in lactation, subnormal temperatures, fæces of a thin clay-like consistency and colour, in which ropy mucus was present in considerable quantity. Recovery occurred in all three cases in from three to five days without interference. The G.V.S. expressed the opinion that the cause was some unknown vegetable poison.

VICTORIA.

The testing of the formerly infected area has been carried to a satisfactory conclusion. None of the cattle during the four months they were exposed showed the slightest symptoms of Coast Fever. It may be noted that all cattle were removed from the infected area in October, 1907, that the last authentic case of Coast Fever occurred in June, 1907. The whole district may now be regarded as free from Coast Fever infection.

Horse Sickness.

Two deaths reported.

SELUKWE.

African Coast Fever.

The test cattle on the formerly infected area remain healthy.

Horse Sickness

is reported as being very prevalent.

HARTLEY.

Tsetse Fly is becoming very troublesome and upwards of 60 deaths from Nagana have occurred during the last few months.

MELSETTER.

No contagious disease. Two horses died from Horse Sickness.

MAZOE.

No contagious disease. One horse died from Horse Sickness. Two oxen died from arsenical poisoning contracted whilst being dipped.

ENKELDOORN.

No contagious disease. Two horses and one mule died of Horse Sickness.

GWELO.

A few cases of Liver Disease amongst calves have been reported.

All other districts: No disease reported.

FEBRUARY, 1909.

SALISBURY.

With the exception of two suspected cases of Rabies, no contagious disease was reported.

Losses from horse sickness have been very severe.

BULAWAYO.

No contagious disease. The cattle on the old Coast Fever area at Nzingwani remain healthy.

The following animals were tested for Glanders upon entry and found healthy: Horses, 16; Mules, 81; Donkeys, 5; total, 102.

UMTALI.

African Coast Fever.

Existing Outbreaks: No deaths.

Fresh Outbreaks: One death occurred on Mr. Van Reit's farm, "Lowlands," which lies partly in this and partly in Portuguese territory. This farm has long been suspected as being infected, and is within the Police Cordon.

GWELO.

African Coast Fever.

The test cattle placed on the old infested area at Selukwe remain healthy.

Horse Sickness.

A large number of deaths have occurred from this disease.

VICTORIA

No contagious disease reported, the district being now free from Coast Fever. Three deaths reported from Horse Sickness.

ENKELDOORN.

Horse Sickness.

Fifteen horses and 14 mules reported having died from this cause during the month.

All Other Districts.

Nothing to report.

J. M. SINCLAIR,

Chief Veterinary Surgeon.

Agricultural Reports.

DECEMBER, 1908.

BULAWAYO.

FENCING.

As referred to last month a petition is at the present time being signed by the various farmers interested asking His Honour the Administrator to put Part I of the Fencing Ordinance into operation in that part of the Bubi District lying between Nyamandhlovu, the Bembesi river, and the southern boundary of the Bubi District.

All will agree that this is a step in the right direction, all the more valuable since it comes spontaneously from the farmers themselves and is the first attempt made to apply the provisions of the Fencing Ordinance in Rhodesia.

Cutworms have been reported very active and are on one farm destroying a field of 30 acres of mealies.

CATTLE IMPORTED.

A very nice consignment, including eleven Aberdeen Angus and five Shorthorn bulls, arrived during the month from Great Britain. A few of the animals stayed in Matabeleland but the majority passed through to Mashonaland. It is a very good sign to see such importations taking place, but it would be better still if a few heifers were also imported. It will have to be done eventually, and the sooner it is started the better for the cattle breeding industry.

There is still a good demand for Colonial bred heifers, and they are coming forward in fair numbers. Locally bred ones are practically unobtainable except at prohibitive prices.

Should there be a fairly big demand for cattle arise, such as might be created by say 50 new settlers requiring 30 head each, it is difficult to know where the number (1,500) could be obtained, unless some of the native districts of Mashonaland such as Victoria could furnish them.

HORSE SICKNESS

This disease has started and claimed a few horses as victims with no doubt more to follow them.

AGRICULTURAL SHOW.

The committee are pushing forward with the preparation of the prize list, and it is hoped to have everything in order early for the Show in June.

VICTORIA.

RAINFALL.

There has been less than an inch of rain this month, consequently both grazing and crops which were coming on nicely, have suffered considerably; in fact unless we have rain very shortly there is a most serious outlook. Chibi appears to be particularly bad.

STOCK.

Stock are all looking well, and there is no disease whatever except the old long-standing "Scab."

DISEASES.

The animals on the infected veld still remain normal and apparently that part of the district is clean. The police cordon has been withdrawn. There have been three deaths from horsesickness, being earlier than usual for this district.

GRAIN.

The question of the grain supply has become serious. Grain is unprocurable and although there is a quantity in Gutu, the donkey transport riders cannot fetch it in consequence of the state of the roads.

CATTLE TRADE.

The natives have practically stopped selling and those they do sell obtain good prices. A few head have also been sold to outside people by the local farmers at very fair prices.

GWELO.

STOCK.

Nothing of moment occurred during December amongst live stock, no contagious diseases having appeared among grown cattle.

White scour and gall-sickness were prevalent for a time amongst calves, with quite a percentage of deaths resulting, but chiefly from the treatment, which consisted of sheep dip, podophyllin, axle grease, etc.

JANUARY, 1909.

BULAWAYO.

THE SEASON AND CROPS.

Good rains have fallen during the month. In some cases mealies planted in low lying Vlei soils are suffering (turning yellow) from being waterlogged. Cutworms and borers are also at work among a good many fields.

SELUKWE.

STOCK.

Another satisfactory month has passed with regard to sickness in this district. The test cattle and all unsalted stock are doing well. Some very good dairy cows have lately been brought in.

Sheep and goats in this district are now clean. Horse-sickness is very prevalent among mules and a good many have died within the district last month. So far only one horse has died of the disease.

The native movements of cattle from Victoria and Chibi to Selukwe district have been considerable.

VICTORIA.

RAINFALL.

There have been good rains during this month and the outlook now is much more promising. Crops and grazing have improved wonderfully.

STOCK.

Stock are all looking well, and practically no disease in the district beyond a few cases caused by the wet weather (chiefly lung and liver complaints amongst calves).

Two horses have died from horsesickness.

Scab is prevalent at numbers of kaffir kraals.

GRAIN.

The opening of the roads for ox transport has relieved the district to a certain extent, and several lots of grain have been brought into town.

Mealies in small quantities are obtainable at £2 per 200 lbs. bag. Rapoko grain at from 27s. 6d. to 35s. per bag of 200 lbs. Oat forage at from 10s. to 15s. per 100 lbs.

OX TRANSPORT.

The relaxation of the existing Regulations by Government Notice No. 5 of 1909 has been greatly appreciated by the inhabitants of the district and has been freely taken advantage of.

All cattle being worked under the new conditions are regularly dipped or sprayed. In fact that principle is fully recognised here by all parties as being beneficial both to the animals and to the district.

CATTLE TRADE.

Local buyers are able to purchase from the natives at fair prices, and several good bargains have been made where the natives are short of grain, this being given in exchange for cattle. 100 bags of rapoko grain have just arrived from Selukwe for this trade. A decent beast for one bag is about the usual transaction.

MZINGWANI.

CATTLE.

During the month six deaths have been reported as occurring amongst the herds belonging to natives being due in all cases to attacks of wild dogs. A large pack of these animals has been occasionally seen in the vicinity of the particular native herds.

The cattle at the temperature camp are looking well and in good health, also those animals belonging to natives outside the fence.

CROPS.

The greater part of all the native crops are poor, mainly owing to the severe drought in December.

The mealies especially are very bad, the plants being scarcely three feet high and already in flower and bearing only one small cob.

There are however a few gardens mostly along the Mzingwani and Insiza rivers where the crops are looking well.

Heavy rains have fallen during the month but unfortunately too late for being of use to the earlier planted crops.

The cordon fence has sustained considerable damage from the flooded rivers, large portions having been completely carried away.

INSIZA.

There are no stock diseases to report from this district. All stock are now in fine condition, calves being exceptionally strong.

Throughout the month the rains were very copious.

Two horses have died from horsesickness within the last week, and one uninoculated mule.

ENKELDOORN.

During the month there has been no outbreak of any kind amongst stock.

Mr. Shand's shorthorn bull has died of gallsickness.

A mule and two horses have died during the month of horsesickness.

CROPS.

The mealie crops are looking very well but are not heavy owing to want of rain during the months of November and December. A few nice showers fell during the first part of January but after that it has been raining heavily almost every day.

A few farmers are preparing land for the purpose of planting potatoes next month (February).

Native crops are very good and promise to yield much more grain than last year.

Mealies for consumption are unobtainable at present and rapoko is very scarce also.

No farmers are going in for tobacco this year. Farmers intend putting in a good breadth of wheat this winter, also oats.

No locusts and no rabies is reported.

FEBRUARY.

In Matabeleland the petition for putting Part 1 of the Fencing Ordinance in force in a portion of the Bubi district has been forwarded to Salisbury. If it is put into

force a good proportion of the occupied farms in that area will be fenced or partly fenced within the next twelve months.

Redwater and gallsickness have been prevalent during the last two months, especially amongst imported stock. The two diseases have often existed at the same time in a herd, making it difficult for the owner to diagnose which disease the animals were suffering from. Isolated cases of redwater have been reported amongst stock bred in this country, but several cases of gallsickness have been reported in such animals without redwater being present at the same time.

We have been advising the use of methyl arsenite of soda for these diseases this year, and so far the results reported with regard to redwater are very favourable. One owner had a severe outbreak of this disease amongst some 50 imported Colonial heifers, and two died before he commenced the treatment, but after doing so no further deaths occurred, although there were about twenty that developed the disease—twelve in a severe form, standing with backs arched and urinating bloody-coloured urine frequently.

The dose that has been recommended has been one dram once a day for three days in succession for a well-grown-out beast, either dissolved in a small quantity (half a bottle) of cold water and used as a drench, or throw the powder on the tongue and wash it down with a little cold water.

The dose mentioned is a full dose, and should not be increased; in fact, after the three doses have been given mild symptoms of arsenical poisoning may be presented, such as an offensive diarrhoea; these symptoms usually pass off in a day or two, but it is advisable to give the animals about 10 drops of creosote mixed with half a bottle of cold water or more, well shaken up to mix thoroughly.

In cases of gallsickness, attended with constipation, it would be advisable at the commencement of the treatment to give a dose of Epsom salts or raw linseed oil, at the same time as the first dose of methyl arsenite of soda.

Methyl arsenite of soda can be obtained from the chemists in Bulawayo at about 3s. 6d. the ounce bottle, and creosote at 1s., so the cost of obtaining a stock of the

necessary medicine in case of outbreaks of these diseases is not excessive.

Scales for weighing the quantities are unnecessary; the creosote (a liquid) can be easily measured in drops, and the methyl arsenite of soda (a powder) can be bought in bottles containing exactly one ounce. If the contents of the bottle are poured out into a clean piece of paper in a heaped up pile, divide into two by separating this pile through the centre with a table knife, divide in the same way the remaining heaps twice, and eight heaps will result, containing as near one dram each as necessary for all practical purposes. These powders can be then wrapped in paper for use as required. If the animals are small the original ounce of powder can be divided into a greater number of powders by the table knife.

Horsesickness has been very bad this season, and a large number of animals have succumbed to it. The mules immunised during last season by Dr. Theiler's method have not escaped either. Three deaths occurred around Bulawayo and the same number in the Gwelo district that were immunised in Rhodesia, also six others in the Bubi district that were immunised at Pietersburg in the Transvaal.

A cure (?) for this disease has reached this country from the Barberton district in the Transvaal, so before this season is over there will likely be a chance of testing this remedy.

At Selukwe the testing of the district is proceeding satisfactorily. Since the end of November the Tebekwe cattle have been at large, and up to the present show no sign of Coast Fever. The temperatures of these cattle have been taken daily, and have not varied from the normal. The remainder of young stock and unsalted beasts that were confined previously to test are all looking exceedingly well. These, having been released, are now grazing at Selukwe township and outside.

Fifty head of cattle that are working daily between Tebekwe mine and the railway station, have been here fifteen days without showing any change.

Up to the present the number of deaths from horsesickness has been five horses and twelve mules. One owner lost seven uninoculated mules out of one stable. No case where a cure has been effected has occurred.

There are very few young small stock in the district, many dying off on account of the veld being too coarse. There have also been many cases of death due to poisonous plants picked up on the veld. There are a few isolated cases of scab among native goats. Sheep are not affected with this scab, and by continuous dipping, together with clean grazing ground, all small stock can be cured.

In the Gwelo district the weather has been wet and warm during the month, and grass is very good and still growing, so if March is reasonably fair a splendid crop of extra quality of hay will be secured. Farmers are waking up to the necessity of having a good lot of hay for winter feeding.

The river Gwelo only began flowing on the 28th of January, the veld having absorbed 23 inches of rain before any surplus went into the river, so it may be expected that grass will be green and nutritious well into the winter.

Maize promised very well until about three weeks ago, when the continuous rains and hot forcing weather caused a lot of spurious growths to take place, to the detriment of the cob that had already formed; it is thereby probable that when harvested the yield will be disappointing, although the stalks in many fields average over 11 feet in height.

All kinds of stock are in excellent condition. Horse-sickness has been unusually prevalent and fatal.

In the Umtali district of Mashonaland considerable areas of land are being cleared and turned over. There are various reasons for greater attention being paid, to agriculture, the chief being (1) the stoppage of ox transport on the roads, (2) the soaking rains have softened the ground, allowing of easy stumping and ploughing, (3) more farmers are realising that agriculture is profitable.

If stoppage of transport means increased attention to agriculture, it is a blessing in disguise. No country can prosper unless its farmers are doing well, and it means that money will stay in the country and not be expended in the purchase of tinned products from oversea. The townspeople obtain their wheat and meal from America or Australia, mealies of late from Portuguese East Africa or Natal, onions from Egypt, lucerne hay from Natal, and baled forage from Cape Colony and Australia.

The planting of cereals in the months of January and February has been attempted on two farms, and by so doing it is hoped to raise crops without irrigation, and at the same time escape the fungoid diseases that destroy the crops if sown too early in the wet season.

The veld is in good condition, and well made hay should ensue if the rains hold up permitting of it. There is a very excellent stand of lucerne on the Devonshire farm, no better to be seen elsewhere. One patch stood fifteen inches high after a ten day's growth. I saw some fine patches on which the grower is experimenting with manurial agents. The lucerne is growing on black granitic sand, and it is under irrigation. New Zealand spinach has for some time been grown in the Commonage Market Gardens, and is much appreciated as a vegetable. Of late one farmer has been experimenting with it, attracted by the growth, which takes place vigorously in the dry season, and he reports that all live stock eat it greedily.

Cattle are looking well, but ticks in the ears with sloughing of the parts, and abscesses have proved exceedingly troublesome, taking up much of the stock-owners' time. Contagious ophthalmia is also causing much trouble.

The season is proving rather too wet for small stock, and the condition has not much improved over last month. Footrot on clay and loam soils has been rather prevalent, and wire-worm is beginning to require attention and treatment.

The milk supply is ample, and the supply of butter is at least meeting the demand. Eggs have been almost unobtainable; the hens are moulting, and no great increase of eggs can be expected for a few weeks. Much live poultry is still being imported from Portuguese East Africa; in fact the local supply from farmers is not nearly sufficient.

The supply of local-grown grain is well nigh exhausted. The first consignments of early-grown mealies from Portuguese East Africa have come in, but not in sufficient quantity to relieve the tension. Mealies are quoted at 25s. per bag.

It is anticipated that the Portuguese East African mealies will be the first in, and will command all the high prices obtainable on the opening of the new season's

market. The local grower will come in later, and it is feared that low prices will befall him.

The Portuguese farmers have, from all accounts, at least 60,000 bags for export, and they will swamp the local market. It is rumoured, however, that our neighbours are pressing their Government to give facilities for export to Portugal, into which country colonial produce enters "duty free." The price obtainable f.o.r. by this means is reckoned at 11s. 6d. per bag.

The Eastern growers only hope (since Mozambique maize obtains the colonial produce rates and enters free of duty) is that the scheme outlined will mature, and thereby maintain the price at somewhere about 10s. per bag at the railway siding.

The total rainfall amounts to 29 inches. Nine inches have fallen during the month in light continuous showers.

In the Victoria district there is scarcely any agricultural increase to be observed; only a limited quantity of produce is saleable, so only a limited quantity is produced. The opportunities are magnificent, none better in Rhodesia, but there is no market.

There will be an abundance of native grain this year (rapoko), and in some parts fine mealies, but on the whole the latter will be scarce.

Forage is being imported from the Charter district and grain from Selukwe, also onions and potatoes, which does not speak well for local enterprise; but one must bear in mind that often it has been a feast or a famine and producers have been bitten, and since it is not a wealthy population, farmers do not care to risk a large outlay.

Numbers of cattle are being purchased by local people for cash and grain, but the natives are not generally anxious to sell. When they do they get a very fair price.

There has been quite an exodus of cattle going to the various mines lately (Ruby in particular), but in many cases it is more for the sake of getting the cattle in working condition for things that might be than for the actual work to be obtained on the spot.

The old Farmers' and Landowners' Association has been revived, and there is a good representation. The subscription is fixed at £1 1s., and at this date about thirty members have subscribed. It is to be hoped that more interest will be taken in it than previously.

Market Rates.

Salisbury: Market prices of Agricultural Produce as supplied by Messrs. Wightman and Co.

Mealies	19/- to 20/-	Oats, per bag ..	25/- to 27/6
Rapoko	16/- „ 17/6	Potatoes, per lb. ..	1d. „ 1½d.
Forage, per 100 lbs. . .	10/- „ 11/6	Onions, per lb. ..	2d. „ 3d.

Salisbury: Market prices of Live Stock as supplied by Messrs. Whitfield and Co.

Trained Oxen ..	£10 10s. to £13	Horses	£25 to £35
Untrained Oxen ..	£8 10s. to £10	Mules	£24
Cows (Native) ..	£9 to £10	Mules, V.D. ..	£30
Cows (Colonial), acc-		Donkeys	£5 10s. to £6 10s.
cording to milking		Fowls (Ordinary) ..	4/- to 5/-
capacity	£20 to £30	Pure-bred Fowls ..	15/- to 20/-
Colonial Heifers ..	£10	Turkeys	20/-
Slaughter Oxen ..	38/- to 40/-	Ducks	4/- to 5/-
Africander Bulls (Selected)	£20	Geese	12/6

Bulawayo: The following is a list of the week's quotations. March 12th.

GRAIN.—(Merchants' Prices).

Yellow Mealies ..	19/- to 20/-	Forage, per 100 lbs. . .	10/- to 10/6
White Mealies ..	20/- „ 21/-	Salt (Colonial) p. bag	11/6 „ 12/-
Kafir Corn (mixed) ..	13/- „ 14/-	Onions	16/- „ 17/-
Inyouti	12/- „ 13/-	Potatoes	16/- „ 17/-
Oats (Colonial) ..	20/- „ 21/6	Monkey Nuts (per bag)	14/6 „ 15/6
Bran	14/- „ 15/-	Beans	32/6 „ 33/6

LIVE STOCK.

Slaughter Cattle, fat,		Dairy Cows	£25 to £32 10s.
per 100 lbs. ..	37/6 to 40/-	Trek Oxen	£9 to £11 10s.
Slaughter Sheep (local)		Horses, Riding (un-	
per 100 lbs. ..	15/- „ 16/-	salted)	£17 10s. to £35
„ „ (Colonial) ..	23/6 „ 24/-	Mules (inoculated) ..	£25 to £30
Bechuanaland Goat		Colonial Heifers ..	£8 15s. to £12
Ewes	10/6 „ 12/-	Donkeys	£6 10s. to £8 10s.
Local Cows	£10 „ £15	Zambesi Cows ..	£7 10s. to £10

THE MORNING MARKET.

Cabbages (large size),		Potatoes, per bag ..	10/- to 17/-
per 3	1/- to 2/-	Watermelons, each ..	0/6 „ 1/-
Cabbages (small size),		Local Butter	1/3 „ 1/6
per 3	0/6 „ 1/-	Beetroot, p. 3 bunches	0/2 „ 0/3
Carrots, per 3 ..	0/3 „ 0/5	Parsnips, p. 3 bunches	0/3 „ 0/4
Pumpkins, each ..	0/6 „ 1/-	Beans, per table ..	1/3 „ 3/6
Tomatoes, per row ..	0/9 „ 2/-	Marrows, per 3 ..	1/- „ 1/6
Lettuce, per row ..	0/6 „ 1/3	Muscovy Ducks ..	2/6 „ 3/6
Eggs (imported) ..	1/6 „ 2/0	Aylesbury Ducks ..	3/6 „ 4/6
Eggs (local)	3/- „ 4/3	Turkeys	10/- „ 15/-
Firewood, per load ..	12/6 „ 20/-	Fowls	2/- „ 2/6
Peas, per table ..	1/6 „ 5/-		

Kimberley: Market quotations for Produce as supplied by Messrs. James Lawrence and Co., Limited. March 12th.

Bran, per bag 100 lb.	6/6 to 7/-	White Mealies, Colonial (hard), 203 lb.	12/6 to 13/6
Barley, per bag 163 lb.	8/6 „ 12/-	White Mealie Meal, 183 lb.	14/- „ 15/6
Beans, Sugar, bag 203 lb.	30/- „ 35/-	Oats, per bag, 150 lb.	9/- „ 10/-
Beans, Kafir, 203 lb.	none.	Lucerne Hay, per 100 lb.	4/6 „ 5/3
Chaff (Colonial), bale	4/6 „ 9/6	Onions, per bag 120 lb.	4/6 „ 7/6
Chaff, „ pressed, 100 lb.	3/- „ 4/-	Potatoes, per bag, 163 lb.	10/- „ 16/-
Forage, per 100 lb. (good)	4/9 „ 5/3	Potatoes (local)	11/- „ 17/-
Forage, per 100 lb. (inferior)	4/- „ 4/6	Tobacco, per lb. (good)	0/4 „ 0/7
Kafir Corn, South African mixed	10/6 „ 11/6	Tobacco, per lb. (inferior)	0/1 „ 0/-
Kafir Corn, White	11/- „ 12/6	Wheat, per bag 203 lb.	18/6 „ 20/-
Boer Meal (Colonial), unsifted, mixed	25/- „ 27/-	Butter, per lb. (fresh)	0/8 „ 0/10
Boer Meal (Colonial), sifted, mixed	27/6 „ 30/-	Butter (second qual.)	0/6 „ 0/7
Flour (Colonial), per bag 100 lb.	15/- „ 15/6	Eggs, per dozen	1/4 „ 1/6
Yellow Mealies, Colonial, 203 lb.	12/- „ 13/-	Ducks, each	1/9 „ 2/3
		Fowls, each	1/- „ 1/6
		Turkeys, each	3/- „ 7/-
		Hams and Bacon, per lb.	0/- „ 0/-

SLAUGHTER.

Oxen (good) prime, 600 lb. upwards	£8 to £11	Hamels, 40 lb. to 45 lb.	10/- to 13/6
Cows (good), 450 lb. upwards	£4 „ £7	Cape Sheep (good)	11/- „ 14/-
Calves .. 4d. per lb. dead weight.		Kapaters (good)	10/- „ 13/-
Pigs, 100 lb. (clean) .. 2½d., 3d. per lb. live weight.		Oxen, Trek	£6 to £7
Lambs, 30 lb.	7/- to 9/-	Riding Horses	£10 „ £25
		Draught Horses	£10 to £22 10s.
		Mares	£9 to £20

Mealies are slightly firmer. Kafir Corn weak. Oathay firm. Oats and Chaff plentiful and cheap. Wheat firm. First-class Potatoes in demand. Sound Dry Onions firm. Eggs weaker. Fat Poultry enquired for. Butter very plentiful and prices low. Fruit and Vegetables, fair supplies arriving. Slaughter Stock, only prime enquired for.

Johannesburg: Weekly market prices as supplied by Messrs. Hubert Morisse and Co., Commission Agents.

Barley, per 163 lb.	9/6 to 15/-	Lucerne, per 100 lb.	4/- to 5/9
Bran, per 100 lb. (Colonial)	8/3 „ 8/6	Manna	3/6 „ 4/6
Chaff best, 100 lb.	2/9 „ 3/6	Transvaal Hay	6d. „ 1/-
Eggs, per doz. (Col.)	1/10 „ 2/3	Oats, per 153 lb.	7/6 „ 11/-
Salt, per bag	4/9 „ 5/6	Potatoes, best, per 153 lb.	15/6 „ 20/-
Forage (Transvaal)	6/9 „ 7/-	Potatoes, medium and inferior	9/- „ 13/6
Forage (Colonial), best, per 100 lb.	6/9 „ 7/-	Onions, 120 lb.	6/6 „ 9/-
Forage, medium and inferior, per 100 lb.	1/6 „ 5/9	Turkeys (Cocks)	6/6 „ 13/-
S. Meal, best fine	26/3 „ 27/9	Turkeys (Hens)	3/- „ 5/6
Rye	12/- „ 13/3	Fowls	1/- „ 2/9
Wheat	19/6 „ 21/6	Ducks	1/9 „ 2/6
Mealies (Hickory King Whites)	14/3 „ 14/6	Geese	4/9 „ 5/6
Mealies (O.R.C. Whites)	13/6 „ 13/9	Pigeons	9d. „ 10d.
Mealies (Yellow)	13/2 „ 13/4	Butter (O.R.C.)	5d. „ 10d.
Kafir Corn, per 203 lb.	11/3 „ 12/-	Pumpkins, each	2d. „ 6d.
Hay, Sweet (Transvaal)	1/- „ 1/6	Beans, per 200 lb. (Sound)	12/6 „ 40/-

SlaughterOxen(prime)	£11 to £12 10s.	Lambs	8/6 to 14/-
SlaughterOxen(med.)	£8 to £10 10s.	Goats (Boer Kapaters)	11/- „ 19/6
Slaughter Cows	£5 to £7	Pigs (live weight)	3d. „ 4d.
Beef (per 100 lb.,			Good demand.
prime)	£1 10s. to £1 12s. 6d.	Mules (large)	£17 to £22
Beef (per 100 lb.,		Mules (medium)	£15 10s. to £16 10s.
medium)	£1 6s. to £1 9s.	Mules (small)	£13 to £15
Milch Cows (Cape)	£16 10s. to £27 10s.	Horses (good)	£18 „ £25
Trek Oxen	£7 to £8 10s.	Horses (ponies)	£12 „ £16
Tollies	£4 to £5	Donkeys	£5 „ £6
Sheep (Cape and Bas-		Heifers (12 to 18	
tard)	4d. per lb. ; 15/- to 19/-	months)	£6 to £6 10s.
Sheep (Merino)	4d. per lb. ;	Heifers (2 to 3 years)	£7 to £8 10s.
	15/- to 20/6	Cows (breeding)	£8 to £9 10s.
Slaughter Ewes	8/6 „ 12/6		

Good supplies of Slaughter Oxen continue to arrive, but Prime animals still find a ready sale. First-class Trek Oxen are in very fair demand, but poor or inferior quality are hard to sell. Tolleys are a glut and practically unsaleable. Sheep are arriving very freely, values are lower, but prime stuff sells readily. There is an excellent demand for Prime Boer Kapaters. Pigs are scarce, and prime young Porkers 60 to 100 lbs. sell readily. Good Mules and Horses are both scarce and sell well. There is a good supply of rubbish offering at low rates. Donkeys are scarce and in better demand. Breeding stock very plentiful and cheap. We can offer some very fine young Merino ewes cheap.

SOUTH AFRICAN STUD BOOK.

A RECORD of all classes of Stock, the object being to encourage the breeding of Thoroughbred Stock and to maintain the purity of breeds, thus enhancing their value to the individual owner and to the country generally.

Applications for Membership and entries of Stock should be addressed :

For Cape Colony to—

A. A. PERSSE, P.O. Box 703, CAPE TOWN.

For Transvaal to—

F. T. NICHOLSON, P.O. Box 134, PRETORIA.

For Orange River Colony—

E. J. MACMILLAN, GOVERNMENT BUILDINGS,
BLOEMFONTEIN.

A. A. PERSSE,

Secretary South African

Stud Book Association.

Government Notices.

No. 188 of 1906.

26th July, 1906.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the regulations promulgated by Government Notices Nos. 264 of 1905 and 164 of 1906 and declare the following to be of full force and effect in lieu thereof within the Province of Matabeleland, exclusive of the District of Gwelo as described and defined by section 4 (c) of the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which area is hereby declared to be an area infected with a destructive disease and is hereinafter called the said area.

1. No cattle shall be moved from any other part of the Territory of Southern Rhodesia into the said area.

2. The movement of cattle to, from or across any defined area appearing in the schedule hereto or any area which may hereafter be added to that schedule so long as such area remains in and is not withdrawn from the schedule is absolutely prohibited save and except as is provided for in sections 3, 6 and 7 of these regulations.

3. The movement of all cattle within the said area is prohibited save and except

- (a) On permission granted by an Officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within an area of land enclosed by a substantial fence.
- (d) Within a radius of four miles of any native kraal situate within the boundaries of any Native Location or Reserve, and as is hereinafter further provided.

4. The movement of cattle for slaughter, *bona fide* farming, mining or breeding purposes or for private milk supplies shall be permitted under the written authority of an official thereto duly authorised subject to the following terms and conditions:

- (a) That cattle are moved to the nearest or most suitable railway station or siding, and thence by rail to their destination, or, where the district is not served by a railway by the most suitable route to their destination, all cattle travelling by road shall be under the personal supervision of a responsible white man approved of by the Cattle Inspector or of a native approved of by the Native Commissioner and the Cattle Inspector of the district within which the movement takes place.
- (b) That written permission of owners, occupiers or managers of all occupied land, and in the case of Native Reserves, of the Native Commissioner of the District over which such cattle shall pass to the nearest station, siding or destination is obtained; provided that in the event of such owners, occupiers, managers or Native Commissioner refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (c) That such cattle shall before being moved, be thoroughly disinfected by dipping or by spraying to the satisfaction of the Officer issuing permit, and at the expense of the owner of such stock, and if intended for slaughter shall where possible be branded under the supervision of the Officer issuing permit with the letters "V.D." on the near side of neck.

- (d) That cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (e) hereof, be immediately taken to the prescribed quarantined area and there be quarantined and confined, and where not branded in terms of clause (c) hereof, be similarly branded under the supervision of a duly authorised officer.
- (e) That all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying in terms of clause (c) hereof shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area.
- (f) That all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of their admission, and under no pretext whatever shall cattle so admitted be permitted to leave the said area alive; all such cattle shall after admission to the said area be considered as likely to be infected with disease and if found wandering outside the said area or in possession of any person may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (g) That on arrival at destination cattle other than slaughter cattle shall be dipped or sprayed and shall be effectually isolated from all other cattle on the same land for a period of four weeks.

5. The movement of working cattle may be permitted under the following conditions only :—

- (a) Within a radius of six miles of any working mine or mine in course of development for the purposes of such mine, provided that such cattle shall only be moved under a permit of a duly authorised officer, and shall be dipped every fourteen days or where no dipping tank is available be thoroughly sprayed with an approved dip, provided further that such permission shall not be granted when it conflicts with any other section of these regulations, or if such movement is considered dangerous to other cattle within the six mile radius.

Sub-section (b) cancelled by Government Notice No. 216 of 1907.

6. In the event of the failure of pasturage or water on land on which cattle are located, the movement of such cattle will be permitted, provided :—

- (a) That such movement shall be to nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 4 (b) hereof.
- (c) That movement shall be by permit only of a duly authorised officer, and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector and Native Commissioner of the district.

7. For the purposes of cleansing an area from disease the Controller of Stock may, on the authority of the Administrator and on the advice of the Chief Inspector of Cattle, and subject to such conditions as may be stipulated, permit the removal of cattle from a scheduled area to an adjacent clean area.

8. All applications for the removal of cattle under sections 4 and 5 hereof shall be submitted to and approved of by the Veterinary Department before being granted and when such movement is from one Native District to another the application shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Native Commissioners of the Districts to and from which the removal is made.

Section 9 cancelled by Government Notice No. 114 of 1908.

10. All veld-fed animals within the limits of the various Commonages or Townlands or other centres where there is common grazing ground, and wherein cases of African Coast Fever have occurred within two years of the date of publication hereof, and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days: provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

11. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations in respect of any dipping done at a public dipping tank :—

For cattle (over six months)	3d. per head.
For horses and mules	3d. „
For calves (six months and under)	2d. „
For small stock	1d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under above tariff.

12. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed ; provided that the Inspector may, at his discretion, carry out such disinfection with the assistance of and at the entire cost of the owners of the animals to be sprayed, the cost of such disinfection being payable at the time of the spraying.

13. Whenever the owner, occupier, or manager of a farm shall adopt measures for the cleansing of his cattle running thereon, either by spraying or dipping or by any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the said farm to cleanse such cattle, and the Native Commissioner of the District in which such farm is situated may enter into an arrangement with the native owners of cattle to cleanse such cattle at a charge to be mutually agreed between the said owner, occupier, or manager and the said native owners.

14. Any person contravening any of the provisions of these regulations shall, upon conviction, be liable in respect of each offence to the fines and punishments prescribed by the Ordinance, and in cases where no special punishment is provided, to a fine not exceeding £20, or in default of payment to imprisonment with or without hard labour for any period not exceeding three months, unless the penalty be sooner paid.

SCHEDULE.

- (1) Fingo Location.
- (2) An area within a radius of ten miles of Ntolas Kraal on the farm Emangeni.
- (3) An area comprising the farms Upper and Lower Umvutcha, Reigate, Upper Nondwene, Mapane, Government Farm No. 5, Trenance and the plots adjoining the farms Umvutcha.

No. 216 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the " Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw Sub-section (b), Section 5 of Government Notice No. 188 of 1906, and declare the following to be of full force and effect in lieu thereof :—

Within the said area from private farms and trading stations to any centre of consumption, or to a railway station or siding, or to and from any other farm, or from a mine to a railway station or siding for the purpose of transporting fuel or mining timber, under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of the owners, occupiers, or managers of occupied lands proposed to

be traversed, and, in the case of native reserves, of the Native Commissioners, and that such cattle shall before being moved be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit; provided further that, in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 217 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw as from the 1st October, 1907, the regulations promulgated by Government Notices No. 189 of 1906 and No. 185 of 1907, and declare that the following shall be of full force and effect in lieu thereof from that date within the province of Mashonaland and the fiscal division of Gwelo, as defined by the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which areas are hereby declared to be areas infected with a destructive disease:—

1. The movement of all cattle within the said area is prohibited save and except:—

- (a) On permission granted by an officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within any area of land enclosed by a substantial fence.
- (d) Within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp.
- (e) Within a radius of four miles of any native kraal situate within the boundaries of any native location or reserve, the site of such kraal shall be deemed to be the place where it is situated at the date of publication hereof, and as is further provided.

2. The movement of cattle for slaughter purposes shall be permitted under the written authority of an officer thereto duly authorised, subject to the following terms and conditions:—

- (a) That such cattle are moved by the most suitable route to the centre of consumption. All cattle travelling by road to be under the personal supervision of a responsible white man, or native approved of by the Cattle Inspector.
- (b) That before cattle may enter from a native district not included in any particular group of districts as defined in Section 6 (b) the written permission of owners, occupiers, or managers of all occupied land, and, in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass to the nearest station, siding, or centre of consumption is obtained; provided that in the event of such owners, occupiers, managers, or Native Commissioners refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal if satisfied that the necessary permission is withheld without good and sufficient cause.

- (c) That such cattle shall, on arrival at the centre of consumption, subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area, and there be quarantined and confined, and branded with the letters "V.D." on the near side of the neck under the supervision of a duly authorised officer.
 - (d) That all cattle brought into any centre of consumption shall be disinfected by dipping or spraying at the public dipping station before being taken to the quarantine area.
 - (e) That all cattle admitted to the quarantine area shall be slaughtered within 21 days of their admission, and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter. All such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and, if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
 - (f) That intermediate depots, or concentration camps, for slaughter stock may be allowed at centres approved of by the Chief Inspector of Cattle, provided that no such camp shall be situated within less than a radius of five miles of any commonage, town lands, or grazing ground common to any mining camp, railway station or siding.
3. The movement of cattle required for *bona fide* mining, farming, breeding and dairying purposes and for private milk supplies may be permitted on the written authority of a duly authorised officer, subject to the following terms and conditions:—
- (a) That such movement shall take place subject to the conditions set forth in Section 2 (a) and (b).
 - b) That whenever such cattle shall at any place along the route have passed within a radius of less than five miles of an infected area, the cattle shall upon arrival at their destination be effectually isolated from all other cattle on the same land for a period of four weeks.
 - (c) That whenever the cattle being removed shall at any portion of the route have passed within native districts where infected areas exist, the consent in writing to such movement be obtained from all owners of cattle on farms adjoining that to which movement takes place; and in the case of native reserves of the Native Commissioners of the districts; provided that should such consent be unreasonably withheld by any of the aforesaid persons the Controller of Stock may direct the issue of a permit.
 - (d) That such cattle required for breeding and dairying purposes, or for private milk supplies, when moved to within the boundaries of the various commonages, town lands, or of grazing ground common to any mining camp or other centre where cases of African Coast Fever have occurred within 15 months, shall be confined in some enclosed place approved of by the local Cattle Inspector, and, if a case of African Coast Fever occur in such enclosure, shall not be liberated therefrom except in terms of Section 5 hereof, until 15 months after the last occurrence of African Coast Fever within the enclosure in which they are kept, nor shall they be allowed, after liberation, to run upon any of the land specified herein, unless such land has been free from African Coast Fever for a period of 15 months.
 - (e) All cattle introduced in terms of the preceding sub-section (d) shall, on arrival, be taken direct to the Government dipping station and there be dipped or sprayed.
 - (f) All cattle confined in terms of clause (d), and all calves born within the said enclosures, shall be sprayed every 14 days, as may be directed by the Cattle Inspector.
 - (g) No cattle shall be moved from one native district to another unless with the permission of the local Veterinary Officer and the Cattle Inspectors of the districts to and from which such movement takes place.

4. All calves having less than two permanent teeth running within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp or other centres where cases of African Coast Fever have occurred within 15 months of the date of these Regulations, or born thereon after such date, shall be removed to some enclosed place approved of by the local Cattle Inspector, and shall not be liberated or allowed to run at large on such commonage, town lands or common grazing ground until 15 months after the occurrence of the last case of African Coast Fever within the enclosure in which they are confined, or upon such commonage, town lands or common grazing ground.

- (a) No calves shall be permitted to accompany working cattle travelling along the roads mentioned in Section 7, sub-section (c), and all calves born of such working cattle whilst travelling shall not be removed from the place where born.

5. For the purpose of cleansing an area of disease the Controller of Stock may, under the authority of the Administrator and on the advice of the Chief Inspector of Cattle, subject to such conditions as may be stipulated, permit the removal of calves and other cattle to an adjacent clean area.

6. The movement of working cattle other than those specified in Section 7 hereof may be permitted within the following areas and on the terms and conditions hereinafter set forth :—

- (a) Within a maximum radius of 15 miles of any working mine, or mine in course of development, for the purposes of such mine, provided that :—

- (1) Such cattle shall only be moved under permission of a duly authorised Officer, and shall be dipped every 14 days where a dipping tank is available within such area, or, in the absence of a dipping tank, be thoroughly sprayed with an insecticide.
- (2) Such permission shall not be granted where it conflicts with any other section of these regulations, or if such movement is considered to be dangerous to other cattle within the 15 mile radius.

- (b) Within the boundaries of the Gwelo and Lomagundi Native Districts, and within and between the boundaries of the following adjoining Native Districts : (1) Salisbury, North and South Mazoe ; (2) Hartley, Charter and Chilimanzi ; (3) M'tokos, M'rewas, Marandellas and Makoni ; (4) Inyanga, Makoni and Umtali (as defined by Government Notice No. 13 of 1899) ; (5) Along the road West of the Sabi River from Odzi Bridge to Makondo Copper Mine, subject to the following conditions :

- (1) That the movement will be permitted for such period as the Controller of Stock may in his discretion, and on the advice of the Chief Inspector of Cattle, deem expedient, provided that such permission may at any time be withheld or withdrawn without notice.
- (2) That all applications for removal shall be approved of by the Cattle Inspectors of the districts through which the cattle pass.
- (3) Provided that in the event of such Cattle Inspectors refusing to grant permits for the removal of cattle, the Chief Inspector may, on the advice of the local Veterinary Officer, direct the issue, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (4) That all such cattle are dipped every 14 days where a tank is available, or, in the absence of a tank, are thoroughly disinfected by spraying.

7. The movement of "salted" or immune working cattle shall be permitted on the following terms and conditions :—

- (a) That such cattle have been registered and branded under the supervision of the Cattle Inspector with the brand "T.O." on near shoulder and the registration number on near horn, in terms of Section 7, clauses (a) and (b) of Government Notice No. 109 of 1905.

(b) That the movement of such cattle shall only take place under the written permit of a duly authorised officer and subject to the conditions that they are disinfected by dipping every 14 days, where a dipping tank is available, or, in the absence of a dipping tank, by thorough spraying with an insecticide.

(c) That movement of such cattle only shall be permitted :—

- (1) Along the main roads of the Melssetter District.
- (2) From Umtali to the Makondo Copper Fields.
- (3) From Melssetter to Umtali.

8. In the event of failure of pasturage or water on land on which cattle are located the movement of such cattle will be permitted, provided :

- (a) That such movement shall be to the nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 2, clause (b) hereof.
- (c) That such movement shall be by permit only of a duly authorised officer and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector of the district.

9. All applications for the removal of cattle under Sections 2, 3 and 8 hereof shall be submitted to, and approved of by, the local Veterinary Officer before being granted.

10. All permits granted under the provisions of these Regulations shall specify the number and brands of cattle, route to be travelled and period allowed, and may define places of outspan, and all other conditions endorsed on such permits by the officer issuing the same shall be strictly observed.

11. All veldt-fed animals within the limits of the various commonages or town lands, or other centre where there is common grazing ground within the districts of Umtali and Melssetter and the scheduled area at Selukwe, upon which public dipping tanks have been established, shall be dipped therein at least once every 14 days ; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

12. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these regulations in respect of any dipping done at a public dipping tank :—

For Horned Cattle (six months old and over)	..	3d. per head.
For Horses and Mules	.. .. .	3d. „
For Calves (under six months) and Donkeys	..	2d. „
For Small Stock	.. .. .	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under the above tariff.

13. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed : provided that the Inspector may at his discretion carry out such disinfection with the assistance of and at the entire cost of the owner of the animals sprayed, the cost of such disinfecting being payable at the time of spraying.

14. Whenever the owner, occupier, or manager of a farm shall adopt means for cleansing his cattle running thereon, either by spraying or dipping or any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the same farm to cleanse such cattle or any others before permitting them to enter or pass over such an area, and the Native Commissioner of the district in which such farm is situated may enter into an arrangement with the native owners of cattle, to cleanse such cattle at a charge to be mutually agreed upon between the said owner, occupier or manager and the said native owners.

15. Any person contravening the provisions of these regulations shall be liable to the punishments prescribed by the Ordinance, and in cases where no special punishment is prescribed by the said Ordinance to a fine not exceeding £20, or to a period not exceeding three months' imprisonment with or without hard labour in default of payment of any fine inflicted.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 66 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 28th March, 1907.

AFRICAN COAST FEVER.

NOTWITHSTANDING anything to the contrary by regulation provided, I, under and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," hereby provide as follows:—

No cattle shall be allowed to be at large, or moved about for the purposes of work, or other cause, within the area defined hereunder, unless an Inspector shall be satisfied that the said cattle are immune from the disease known as African Coast Fever, and shall have caused such cattle to be branded with the letters "T O" on the near shoulder.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,
Acting Treasurer.

AREA.

From a point on the Tebekwe River one and a half miles North East of the Wanderer Mine in a straight line to the Wanderer Dam, thence in a straight line to the Sebang Poort, thence along the top of the Eastern slope of the Poort Hills to a point half a mile west of the Paf Mine, thence to the Lundi River in a straight line, thence in a straight line East to the Victoria Road Drift on the Tebekwe River, and thence up the River to the first named point, situate in the Native District of Selukwe.

No. 67 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 19th March, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by Section 5 of the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw that portion of Government Notice No. 94 of 1905 relating to an area set apart for the depasturing and quarantine of slaughter cattle at Selukwe, and declare the undermentioned area to be set apart in lieu thereof:—

A piece of fenced land in extent about 300 acres, situated on the farm Sebang and adjacent to the Township of Selukwe.

W. H. MILTON, Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON, Treasurer.

No. 114 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 16th April, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw section 9 of Government Notice No. 217 of 1907, and declare the following to be of full force and effect in lieu thereof:—

Notwithstanding anything to the contrary elsewhere provided, all applications for the removal of cattle under sections 2, 6 and 8 of the Regulations published under Government Notice No. 217 of 1907 shall be submitted to, and approved of, by the local Government Veterinary Surgeon or Cattle Inspector before being granted, except in the native districts of Lomagundi, North and South Mazoe, Mrewas, Marondellas, Makoni, Inyanga, Salisbury, Hartley, Charter, and Chilimanzi, within which districts officers duly authorised to issue permits may authorise such removal without submitting the aforesaid applications to, and obtaining the approval of, the local Veterinary Officer.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer

Provisions extended to Native District of M'danga by Government Notice No. 170 of 1908.

No. 123 of 1908.

Administrator's Office,

Salisbury, 23rd April, 1908.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby provide as follows:—

1. For the purposes of the more effectual control and supervision of cattle in any infected area the Controller of Stock may direct the branding of any such cattle with a special brand by him selected.

2. Any person who shall refuse or neglect to afford all reasonable facilities for branding cattle as aforesaid shall be liable to a fine not exceeding twenty pounds, and in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council,

F. J. NEWTON,

Treasurer.

No. 295 of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 1st October, 1908.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 8, of the 19th day of January, 1905, and so much of any other regulations as may be repugnant to or inconsistent with the subjoined regulations, which are hereby declared to be of full force and effect.

1. The importation of the following animals from the respective countries enumerated is prohibited, owing to the existence or supposed existence of destructive diseases affecting the said animals in the said countries :—

- (1) All animals from the island of Mauritius.
- (2) All animals from German South-West Africa, and all animals except donkeys from German East Africa.
- (3) Pigs from the colonies of the Cape of Good Hope, Transvaal, and the Orange River Colony, the Bechuanaland Protectorate, the Tati Concession, and other countries in which swine fever exists, subject, however, to the exceptions contained in the proviso to this section.
- (4) Dogs from the territories of North-Eastern and North-Western Rhodesia and Portuguese East Africa; provided, however, that dogs from countries from which importation is permitted may be introduced through the port of Beira and brought direct into this Territory.
- (5) Sheep and goats from (a) the districts of Albany, Alexandria, Bathurst, Bedford, East London, Fort Beaufort, Humansdorp, Jansenville, Kingwilliamstown, Komgha, Peddie, Somerset East, Stockenström, Uitenhage, and Victoria East, in the Cape Colony; (b) the districts of Barberton, Lydenburg, Marico, Pretoria, Rustenburg, Waterburg, and Zoutpansberg, in the Transvaal; (c) Swaziland; (d) Portuguese Territory; (e) places north of the Zambesi River.

Provided, however, that the Controller of Stock may at his discretion permit the importation of pigs under six months of age for breeding purposes from the places mentioned in sub-section (3), and sheep and goats from the places mentioned in sub-section (5) hereof, on production of a certificate of a duly authorised Government veterinary officer that such animals are free from disease, have not been in contact with diseased animals, and have not come from an area where destructive disease has existed for twelve months previously.

2. The importation of organic manures, except guano, is strictly prohibited, and the importation of bone meal and bones required for fertilising or feeding purposes will only be permitted when accompanied by the certificate of a responsible and competent person that they have been thoroughly disinfected by treatment by superheated steam or other approved method. Any such manures, bone meal or bones introduced into Southern Rhodesia contrary to this regulation shall be liable to immediate destruction.

3. The areas set out in Schedule "A," and such further areas as may be added to the said schedule, shall be used in connection with pasture lands of the places to which they relate for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever.

4. The appointment of the areas set out in Schedule "B" hereto for the depasturing and quarantining of animals for slaughter in connection with the places therein mentioned is confirmed.

5. The several districts of Southern Rhodesia are hereby declared to be an area infected with scab amongst sheep and goats and the movement of all sheep and goats from any farm to beyond the limits thereof, or from their usual grazing ground within the limits of any town lands or native reserves

to any other place, is prohibited, except under the written permit of an Inspector or Sub-Inspector. Such permit shall set forth the number and description of animals to be moved, the route they shall travel and the period for which the permit shall be in force. In cases where it may appear necessary or desirable the person to whom any such permit is issued may be required to cause the animals referred to therein to be dipped before being moved.

6. The introduction of sheep and goats against which no prohibition exists may be permitted by rail, subject to the following provisions :—

- (1) Plumtree shall be regarded as the port of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto; provided, however, the Controller of Stock may allow the introduction of well-bred sheep or goats intended for sale or stud purposes without being previously dipped.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival; provided, however, that animals intended for immediate slaughter shall be exempt from dipping if marked with a distinctive brand on the back.

7. The introduction of sheep and goats against which no prohibition exists may be permitted by road, subject to the following provisions :—

- (1) M'Lala Drift and Fort Tuli shall be regarded as ports of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival.

8. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by rail shall immediately report such arrival to the Veterinary Office at Salisbury, Bulawayo and Umtali respectively, and no such animal shall be detained at any intermediate station without the written authority of a Government Veterinary Surgeon.

9. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by road shall immediately report such arrival at the police camp nearest to the place where such entry is made, and the officer in charge of such police camp shall immediately report to the Veterinary Department, which shall direct what steps are to be taken to test such animals with mallein, as in the following clause provided.

10. All horses, mules and donkeys upon entering Southern Rhodesia shall be tested with mallein, and the owner or person in charge of such animals shall, in all respects, carry out the lawful directions of the Inspector while such animals are being tested; provided that this regulation shall not apply to animals in transit by railway through Southern Rhodesia and which are not detained *en route*.

11. The Inspector may direct the detention of any animal, and its isolation for the purposes of such examinations and tests as may be deemed expedient during which period of isolation or detention it shall be maintained and tended at the expense of the owner. If in the case of any such animal a second injection of mallein, applied at an interval of not less than ten days, is followed by a reaction indicative of the existence of glanders, such animal shall be forthwith destroyed.

12. Horses, mules and donkeys lawfully in this Territory, and required for purposes necessitating frequent crossing of the border to and from Portuguese East Africa, may be allowed so to cross on such terms as to registration, branding, testing and other conditions as the Chief Veterinary Surgeon may from time to time deem expedient to prescribe.

13. All horses, mules and donkeys depastured on the town lands of Melsetter and Umtali or on any public outspan adjoining such lands, and within the following area known as the Penhalonga, Imbesa and Samba Valleys, as bounded by the Umtali Waterfall Range on the north, the divide following beacons 18, 24 and 27 on the east, the Christmas Pass Range on the south,

and the Palmyran Range on the west, in the district of Umtali, shall be dipped every fourteen days, by or at the expense of the owner or person in charge of such animals, unless the local Veterinary Officer shall see fit to dispense with such dipping

14. An Inspector may direct the thorough cleansing and disinfecting of trucks which may be reasonably suspected of being sources of infection of any destructive disease, and may direct the destruction of *truck fittings*, fodder, excreta or other matter or thing which may be reasonably calculated to convey such infection.

15. Any person contravening the provisions of these regulations, or the instructions or directions given in terms of these regulations, shall be liable in respect of each offence to a penalty not exceeding twenty pounds, or in default of payment to imprisonment with or without hard labour for a period not exceeding three months, unless where more or heavier penalties have by the aforesaid Ordinance, or by other regulations framed thereunder, been expressly provided.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator.

F. J. NEWTON,

Treasurer.

SCHEDULE "A."

Areas on or near pasture land used in connection with townships set apart for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever :—

1. For the township of Salisbury and its neighbourhood, the Government Farm Makabusi, as defined in Government Notice No. 13 of 1898, namely, about six miles from Salisbury on the Old Charter Road, and bounded on the north, north-east and west by the farm "Willowdale," and on the south and south-east by the Makabusi River.

2. For the township of Umtali, a triangular piece of land situate to the north-east of the township, being that portion of the farm "Birkley" which falls in British territory.

3. For the township of Melsetter, a piece of land included within those lines bounding the pasture lands laid out around the township, which are in common with the outspan in the west, Sawerombi on the north, and Westfield on the north-east, bounded further on the south by a line drawn from the common beacon of Westfield and Lindley to the common beacon of Fairfield and outspan.

4. For the township of Enkeldoorn, a piece of land about $2\frac{1}{2}$ miles due west of the township and bounded as follows : From a point about 400 yards above the junction of a stream running south of Enkeldoorn township with streams running west from the Police Camp ; thence along the first stream to the junction aforementioned ; thence along a valley running due south from the said junction to a point about 700 yards distant ; thence in a north-westerly direction to a point on the top of a rise about 1,200 yards distant ; thence in a straight line to the first-mentioned point.

5. For the township of Victoria, a strip of land half-a-mile in width lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills.

6. For the township of Gwelo, a triangular piece of ground within the reserved lands around Gwelo. It is bounded south by the Watershed Block along its boundary running from its joint beacon with Kanuck westwards to another beacon 1,518 Cape roods distant, bounded north-westwards by a line about 1,350 roods in length to the Inoculation Station, and bounded north-eastwards by a line from the first-mentioned beacon to the Inoculation Station, and about 1,400 roods in length. This piece of ground is called the Inoculation Camp.

7. For the township of Bulawayo, that portion of the commonage bounded on the west and north by the Bulawayo-Mafeking and Gwelo railway lines, on the east by the road known as "Hillside Avenue," on the south to the limits of the commonage and Hillside, known as "Napier's Lease," approximately 4,750 acres in extent.

SCHEDULE "B."

Areas set apart for depasturing and quarantining of animals for slaughter :—

SALISBURY.—Description of the area.—A piece of land, 400 acres in extent, situated on the Makabusi River, below Maggio's plot, towards the southern boundary of the Salisbury commonage.

BULAWAYO.—Description of the area.—That piece of fenced land situated on the Bulawayo commonage between the railway line, to the south, and the Solusi Road, adjoining and to the south-west of the Government dipping tank, in extent 1,000 acres, more or less.

GWELO.—Description of the area.—Starting from a point where the Ingwenia Road crosses the railway, along this road past the sanitary stables to a point a quarter of a mile west, thence in a line parallel with the railway to the Gwelo River, thence along the river to the commonage beacon No. 11, thence in a straight line to the Shamrock road where it is intersected by the Scout's Spruit, thence along the Shamrock road to where it joins Main Street extension, along this to the railway line, and down this to the starting point.

UMTALI.—Description of the area.—Starting from a point at the south-east corner of the farm "Devonshire" and south-west of "Waterfall," up the stream to where it is joined by the stream commonly known as Rifle-butt Spruit, and up this spruit to a point 300 feet below Paulington Bridge. Thence almost due north on the west of Penhalonga Road to the sanitary pits and from the sanitary pits to the Cemetery, thence due west to the "Devonshire" line and along this line south to south-west corner beacon of "Waterfall."

SELUKWE.—Description of the area.—A piece of fenced land, in extent about 300 acres, situated on the farm "Sebanga" and adjacent to the township of Selukwe.

PENHALONGA.—Description of the area.—A piece of land bounded as follows :—To the northward by a line starting from the south-east beacon of the hotel stand to the south-west and south-east beacons of Crawford's butchery. To the eastward from the south-east beacon of Crawford's butchery to the northern boundary of the Penhalonga Proprietary Mines' ground. To the southward along the northern boundary line of the Penhalonga Proprietary Mines' ground. To the westward from the north-west beacon of the Penhalonga Proprietary Mines' ground to the south-east beacon of the hotel stand.

VICTORIA.—Description of the area.—A strip of land, half-a-mile in width, lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills.

SCHEDULE "C."

I, ...
 residing at
 in the district of in the
 Colony, do solemnly and sincerely
 declare that the animals enumerated below are free from any contagious
 disease, including scab, and have not been in contact with any infected
 animals within six months from date hereof, and that to the best of my
 knowledge and belief such animals in travelling to* Station
 will not come in contact with any animals amongst which scab or any other
 contagious disease has existed during that period; further, that such animals
 were thoroughly disinfected by dipping on, and
 will enter Southern Rhodesia within ten days of having been dipped.

And I make this solemn declaration conscientiously believing the same to
 be true.

Declared to at on this..... day
 of before me

.....
 Resident Magistrate, Government Veterin-
 ary Surgeon, Scab Inspector, or Police
 Officer of district from which animals are
 being sent.

Number and general description of animals being sent

Owner's Name and Address.....

Place in Southern Rhodesia to which animals are being sent

* Station within Colony of origin.

CERTIFICATE ISSUED UNDER PROVISIONS OF SECTION I, GOV-
 ERNMENT NOTICE No. 295 OF 1908.

This is to certify that the animals enumerated below are, in my opinion,
 free from any destructive disease, including scab, and to the best of my know-
 ledge and belief have not been in contact with any infected animals nor come
 from, or through, a locality where any such disease is known to exist or has
 existed for twelve months from date hereof.

Date

Place

.....
 Signature of Government Veterinary Surgeon

Number and general description of animals.....Pigs, ...Sheep,..
Goats.

Place from which animals are to be sent.....

Owner's Name and Address

Place in Southern Rhodesia to which it is desired to send the animals

No. 110 of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 16th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal so much of the Regulations published under Government Notice No. 187, dated the 26th of July, 1906, as relate to the importation of cattle from the Colony of the Cape of Good Hope and the United Kingdom of Great Britain and Ireland, and make the following provisions in lieu thereof :—

1. The importation of cattle may be permitted from the Colony of the Cape of Good Hope and the Orange River Colony on the following terms and conditions :—

- (1) A permit shall be required from the Chief Inspector which may contain such conditions as shall from time to time appear expedient.
- (2) Applications for permission to import shall be in the form "A" attached hereto, and accompanied by a declaration in the annexed form "B."
- (3) The importation of cattle with more than two permanent central incisor teeth shall not be permitted.
- (4) All importations shall be by rail, and for the purposes thereof Bulawayo shall be regarded as the port of entry.
- (5) All cattle imported in terms of these Regulations shall on arrival at Bulawayo, Salisbury, or Umtali be removed to a place of quarantine under the supervision of an Inspector of Cattle, there to be submitted to such examination and tests as the Chief Inspector may direct. If such examination or tests disclose the existence of any destructive disease the cattle shall be immediately destroyed and the carcasses thereof disposed of in such manner as a Government veterinary surgeon may authorise or require. The Chief Inspector may permit of any examination or tests as aforesaid being dispensed with in the case of cattle in transit by rail for any place beyond the boundaries of Southern Rhodesia.
- (6) All expenses or losses incident to quarantine, examination, testing or destruction as aforesaid shall be borne by the owner of the cattle.

2. The importation of cattle from the United Kingdom of Great Britain and Ireland may be permitted under the following terms and conditions :—

- (1) Importation shall be through and direct from the coast ports of the Cape Colony, and there shall be a consignment note or other satisfactory evidence that cattle so imported have come direct from Great Britain or Ireland.
- (2) The provisions of sub-sections (5) and (6) of section 1 hereof shall apply to importations in terms of this section.

3. No person shall import cattle in terms of these Regulations except for his own use, provided however that permission may be granted to import for others on the applicant disclosing the name of the person or persons for whom he proposes to act.

4. Any person introducing cattle in contravention of these Regulations, or failing to comply with any conditions attached to permits to import, or furnishing applications, declarations, or other necessary documents known to be false in any material particular, or failing to comply with all lawful directions as to quarantine, examination, testing, destruction or disposal of carcasses, shall be liable to a fine not exceeding £20 for each animal in respect

of which such offence shall have been committed, and in default of payment to imprisonment with or without hard labour for any period not exceeding six months, unless higher or greater penalties shall have been provided for such offences by the "Animals Diseases Consolidation Ordinance, 1904," provided however that the penalties imposed by these Regulations shall not exempt any cattle from destruction in terms of the aforesaid Ordinance.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

ANNEXURE "A."

APPLICATION FOR CATTLE IMPORTATION PERMIT.

GOVERNMENT NOTICE NO. 110 OF 1908, SECTION 1 (2).

1. Applicant's Name and Address.....
 2. Number and Class of Cattle to be imported.....
 3. Area or Farm and District where Cattle are at present located.....
 4. Area or Farm and District to which Cattle are to be moved.....
- Applicant's Signature.....
- Date
- Application
- Permit No.

ANNEXURE "B."

I.....residing on the farm
in.....do solemnly and sincerely declare that the animals
enumerated below have been in my possession since birth, and that lung
sickness, pleuro-pneumonia or any other contagious or infectious disease has
not existed amongst any of my cattle or on my farm within the last four years,
and that to the best of my knowledge and belief such cattle in travelling
to.....* station will not come in contact with any
animals amongst which lung sickness or any other contagious or infectious
disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to
be true.

Declared to at..... on this.....day
of.....before me....., Resident Magistrate
for the District of

Number of Animals.....Bulls.....Heifers.....

Breed.....

Seller's Name and Address.....

Purchaser's Name.....

Place in Southern Rhodesia to which animals are being sent.....

* Station within the Colony of origin.

No. 124 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 30th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare and make known that notwithstanding anything to the contrary elsewhere provided, the importation of cattle for *bona-fide* slaughter purposes may be permitted into the Umtali district from the adjoining Portuguese Territory under the following terms and conditions :—

1. The importation and disposal of cattle introduced in terms of these regulations shall be under the absolute control and direction of the local veterinary surgeon or other duly appointed officer, and shall be regulated by the requirements of consumption.

2. The importation shall be limited to a fenced enclosure approved of by the Controller of Stock, which shall be situated on the Rhodesian side of the Anglo-Portuguese frontier line where it passes through the farm "Birkley."

3. Cattle introduced as aforesaid shall be immediately slaughtered, and no meat thereof shall be removed without special permission unless it is entirely free from skin and ears.

4. The hides of animals slaughtered in the said enclosures shall be immediately immersed in an approved insecticide for a period of not less than twelve hours, and shall not be removed from the said enclosure unless accompanied by a certificate signed by a veterinary surgeon that they have been satisfactorily disinfected and dried.

5. Any person contravening the provisions of these regulations, or the instructions or directions of the local veterinary surgeon or other duly authorised official, given in terms of these regulations, shall be liable, in respect of each offence, to a penalty not exceeding £20, or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding three months, unless where more severe or heavier penalties have, by the aforesaid Ordinance, been expressly provided.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 244 of 1908.

Administrator's Office,

Salisbury, 20th August, 1908.

THE subjoined Proclamation by the Governor of German South-West Africa, prohibiting the importation into that territory of large cattle and grass-hay from Rhodesia, the Bechuanaland Protectorate and Angola, is hereby published for general information.

By command of His Honour the Administrator.

H. MARSHALL HOLE,
Secretary, Department of Administrator.

PROCLAMATION.

Proclamation of the Imperial Governor of German South-West Africa concerning the prohibition of the importation of cattle, etc., from Rhodesia, the British Bechuanaland Protectorate and Angola, dated the 23rd of June, 1908.

Acting on the authority of section 15 of the law relating to Protectorates, etc. (*Imperial Law Gazette*, 1900, p. 13), and section 5 of the regulations issued by the Imperial Chancellor concerning the powers of the authorities

of the Protectorates in Africa and the South Sea and their right to issue orders by Proclamation referring to naval and consular matters, dated the 27th September, 1903 (*Colonial Gazette*, p. 509),

It is herewith proclaimed and ordered for the South-West African Protectorate as follows :—

Section 1.—The importation of large cattle of every kind—namely, bulls, oxen, cows, heifers and calves—as well as of horns, hoofs and skins thereof, and further, the importation of grass-hay from Rhodesia, the British Bechuanaland Protectorate and Angola is prohibited.

Section 2.—Whoever contravenes this order shall be punishable by a fine not exceeding 10,000 M., or by imprisonment not exceeding three months, or by a fine and imprisonment combined. The objects or articles concerned in the contravention of this Proclamation shall be subject to confiscation.

Section 3.—This Proclamation is in force from the date of its publication.

The Imperial Governor,

(Sgd.) VON SCHUCKMANN.

Windhuk, 23rd June, 1908.

No. 248 of 1908.

Department of Agriculture,

Salisbury, 27th August, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the “Animals Diseases Consolidation Ordinance, 1904,” I do hereby authorise the importation from the United States of America of cattle required for *bona-fide* breeding purposes, provided, however, that such importation shall be subject to the provisions of Government Notice No. 110 of the 16th April, 1908, relating to the importation of cattle from the United Kingdom of Great Britain and Ireland.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 268 of 1907.

Department of Agriculture,

The Treasury,

Salisbury, 26th December, 1907.

REMOVAL OF CATTLE FOR SALE.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred upon me by the “Animals Diseases Consolidation Ordinance, 1904,” do hereby provide as follows :—

1. The assembly of cattle for purposes of sale by auction or otherwise may be permitted at such places and under such conditions as the Chief Inspector may from time to time prescribe.

2. The movement of cattle into the province of Mashonaland and the fiscal division of Gwelo from other places in Southern Rhodesia may be permitted under such conditions as the Chief Inspector may from time to time prescribe.

3. The granting of permits for the purposes of Sections 1 and 2 hereof and the nature of the conditions to be attached thereto shall be at the absolute discretion of the Chief Inspector.

4. Any person contravening the provisions of these Regulations or the conditions attached to permits issued thereunder shall be liable to a fine not exceeding £20 or in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 356 of 1908.

Department of Agriculture,
Administrator's Office,
November, 1908.

MOVEMENT OF CATTLE INTO MATABELELAND.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The movement of cattle from the Province of Mashonaland into the Province of Matabeleland and from the Fiscal Division of Gwelo into other parts of Matabeleland may be permitted under such conditions as the Chief Inspector may from time to time prescribe, provided, however, that such movement shall not be permitted in respect of cattle imported from the country to the North of the Zambesi River until they shall have first remained for a period of at least twelve months in the Province of Mashonaland or the Fiscal Division of Gwelo.

2. The granting of permits for the purposes hereof, and the nature of the conditions to be attached thereto, shall be at the absolute discretion of the Chief Inspector.

3. Any person contravening the provisions of these regulations, or the conditions attached to permits issued thereunder, shall be liable to a fine not exceeding £20, or, in default of payment, to imprisonment with or without hard labour for a period not exceeding three months.

By Command of His Honour the Administrator in Council.

No. 47 of 1909.

Administrator's Office,
Salisbury, 15th March, 1909.

IMPORTATION OF CATTLE FROM NORTH OF THE ZAMBESI.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notices Nos. 152 of 1908 and 318 of 1908.

1. The introduction of cattle *via* Feira is hereby prohibited, save and except such cattle for which permits have been issued prior to date hereof.

2. Slaughter cattle may be imported from North-Western Rhodesia up to and including 14th May, 1909, provided that:—

- (a) the permission of the Chief Inspector of Cattle or of a Government Veterinary Surgeon be first had and obtained;
- (b) all such cattle shall be conveyed by rail *via* Victoria Falls, which is hereby declared a port of entry for cattle, and be carried to the station or siding nearest to the centre of consumption;

(c) on arrival at their destination, such cattle shall be subject to the Regulations controlling the movements and disposal of slaughter cattle.

3. On and after 15th May, 1909, the importation of cattle of all descriptions shall be and is hereby prohibited from all places north of the Zambesi River.

4. Cattle for general purposes may be imported from North-Western Rhodesia from 1st April, 1909, until 14th May, 1909, provided that :—

- (a) the permission of the Chief Inspector be first had and obtained ;
- (b) all cattle imported shall be introduced by rail only and *via* the Victoria Falls, and shall be branded before entry with the letters " N.Z." on the near shoulder ;
- (c) all cattle shall on entry be taken to a prescribed area to the north of the Gwaai River, where they shall remain in quarantine for such period as may be ordered by the Chief Inspector of Stock, being not less than six weeks from the date of their arrival ;
- (d) no cattle shall be removed from the quarantine area until examined and certified to be free of disease by a Government Veterinary Surgeon ;
- (e) all cattle removed from the quarantine area as aforesaid shall be taken direct to their destination and shall not be moved therefrom for a period of twelve months from the date of arrival thereat.     

5. Every application for permission to introduce cattle under section 4 shall be accompanied by a certificate in the form of Annexure "A" attached to this Notice.

6. Any person introducing any cattle from North-Eastern or North-Western Rhodesia in contravention of these Regulations, or submitting any certificate false in any material particular, or refusing or neglecting to submit cattle introduced to proper inspection and tests, or failing to quarantine properly such cattle when introduced, shall be liable to a fine not exceeding £10 for every animal in connection with which the offence complained of is committed, and in default of payment of any fine inflicted, to imprisonment with or without hard labour for any period not exceeding three months, and the cattle in regard to which the complaint has been laid and proved may, under the written direction of the Administrator, be destroyed without compensation.   

7. For general information it is notified that steps are being taken to prosecute investigations into the nature of the supposed destructive disease which there is reason to believe exists in East and Central Africa, and that the continuance or withdrawal of the above restrictions is largely dependent upon such decision as may be arrived at. The present step is therefore to be regarded as purely a precautionary one.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

ANNEXURE "A."

I,.....residing on the farm.....
in the district of....., in the territory of North-Western Rhodesia, do solemnly and sincerely declare that the animals enumerated below have been in my possession for twelve months, and that I purchased them from....., residing in the district of.....
in the territory of North-Western Rhodesia, on the.....day of.....
.....(as facts permit), and that no case of lung-sickness or other contagious disease has existed amongst any of my cattle or on my farm, or other cattle with which they have been in contact, during the past

two years, and that, to the best of my knowledge and belief, such cattle, in travelling to Victoria Falls, will not come in contact with any animals amongst which lung-sickness or other contagious disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to be true.

Declared to at.....on this.....day of
.....before me.

Magistrate, District Commissioner, or
J.P., North-Western Rhodesia.

District.....

No. of animals.....bulls.....
.....cows.....heifers.....
.....bullocks.....

Breed.....

Seller's name.....

Purchaser's name.....

Place in Southern Rhodesia to which animals are being sent.....

No. 39 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 11th March, 1909.

MOVEMENT OF CATTLE, PROVINCE OF MATABELELAND.

1. UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 188 of 1906 and 216 of 1907, and declare the following to be of full force and effect in lieu thereof within the province of Matabeleland, exclusive of the district of Gwelo, as described and defined by section 4 (c) of the Southern Rhodesia Boundary Regulations Amendment Regulations, 1898, which is hereby declared to be an area infected with a destructive disease, and is hereinafter called the said area.

2. The movement of all cattle within the said area is prohibited save and except

- (a) on permission granted by the local Cattle Inspector ;
- (b) within the boundaries of any single farm where such cattle are depastured ;
- (c) within an area of land enclosed by a substantial fence ;
- (d) within a radius of four miles from any native kraal situate within the boundaries of any native location or reserve, and as hereinafter further provided.

3. The movement of cattle for slaughter, grazing, *bona fide* farming, mining or breeding purposes, or for private milk supplies, shall be permitted under the written authority of an official thereto duly authorised, subject to the following terms and conditions :—

- (a) that the written permission of owners, occupiers, or managers of all occupied land, and in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass, is first obtained ; provided that in the event of such owners, occupiers, managers or Native Commissioners refusing to grant permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause ;

- (b) that such cattle shall, before being moved, be thoroughly disinfected by dipping or spraying, to the satisfaction of the officer issuing the permit, and at the expense of the owner of such stock, and, if intended for slaughter, shall where possible be branded, under the supervision of the officer issuing the permit, with the letters "V.D." on the near side of the neck ;
- (c) that cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area and there be quarantined and confined, and, where not branded in terms of clause (b) hereof, be similarly branded under the supervision of a duly authorised officer ;
- (d) that all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying, in terms of clause (b) hereof, shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area ;
- (e) that all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of the admission, and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter ; all such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and if found wandering outside the said area, or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.

4. The movement of working cattle may be permitted under the following conditions only :—

Within the said area from private farms, mines and trading stations to any centre of consumption, or to or from a railway station or siding, or to and from any other farm under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of owners, occupiers or managers of occupied lands proposed to be traversed, and in the case of native reserves, of the Native Commissioners, and that such cattle, before being moved, be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit ; provided, further, that in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit.

5. All applications for the removal of cattle from one native district to another shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Cattle Inspector of the district to which the removal is to be made.

6. All permits granted under the provisions of this notice shall specify the number and brands of cattle, route to be traversed, and time allowed for each journey. Any breach of these or other conditions endorsed on the permit by the issuing officer shall be deemed a contravention of these Regulations, in terms of section 9 hereof.

7. All veld-fed animals within the limits of the various commonages or townlands, or other centres where there is a common grazing ground and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days ; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this Regulation, for such reasons as he may regard as sufficient.

8. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations, in respect of any dipping done at a public dipping tank :—

For Cattle (over six months)	..	..	3d. per head.
„ Horses and Mules	..	..	3d. „
„ Calves (six months and under)	..	..	2d. „
„ Small Stock	..	..	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under tariff.

9. Any disinfecting by spraying required to be done under these Regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed; provided that the Inspector may, at his discretion, carry out such disinfection, with the assistance of and at the entire cost of the owners of the animals sprayed, the cost of such disinfection being payable at the time of the spraying.

10. Any person contravening any of the provisions of these Regulations shall, upon conviction, be liable, in respect of each offence, to the fines and punishments prescribed by the Ordinance; and, in the cases where no special punishment is provided, to a fine not exceeding £20; or, in default of payment, to imprisonment, with or without hard labour, for any period not exceeding three months, unless the penalty be sooner paid.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 129 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 7th May, 1908.

RABIES.

WHEREAS it has been shown to me that it is expedient to take measures to prevent the spread of rabies in the undermentioned district, Now Therefore, under and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise and direct that all dogs at the kraals to the natives Chiduku and Maveja, and all dogs within a radius of ten miles of such kraals in the native district of Makoni, shall be destroyed by shooting, poisoning or other approved methods, and that the carcases of all dogs shall be burnt or buried at a depth of not less than three feet below the surface.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,

For Treasurer.

No. 178 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 18th June, 1908.

RABIES.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I hereby declare and make known that the provisions of Government Notice No. 42 of 1907, relating to the muzzling of dogs shall not apply to the following areas:—

The Towns and Commonages of Salisbury, Bulawayo, Umtali, Gwelo, Victoria, Selukwe, Gwanda, Hartley, Enkeldoorn and Melssetter.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 215 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 23rd July, 1908.

RABIES.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the provisions of Government Notice No. 178 of 1908 in so far as they relate to the town and commonage of Gwelo, and declare that the provisions of Government Notice No. 42 of 1907 regarding the muzzling of dogs shall apply to the said town and commonage.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 283 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 24th September, 1908.

RABIES.

WHEREAS it has been shown to me that it is expedient to take measures to prevent the spread of rabies in the undermentioned district: Now therefore, under and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise and direct that all dogs in the undermentioned areas, in the native district of Chibi, with the exception of three male dogs at each kraal (to be exempted at the discretion of the Native Commissioner of the district) shall be destroyed by shooting, poisoning or other approved methods, and that the carcasses of all dogs so destroyed shall be burnt or buried at a depth of not less than three feet below the surface:—

1. Within a radius of six miles of the Native Commissioner's station.
2. Within a radius of six miles of Messrs. Frankis & Rolleston's store.

W. H. MILTON
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 351 of 1908.

Administrator's Office,
Salisbury, 16th November, 1908.

RABIES.

UNDER and by virtue of the powers in me vested under the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the provisions of Government Notice No. 178 of 1908, in so far as they relate to the town and commonage of Salisbury, and declare that the following shall be in force within the said area for a period of six weeks from and including the 17th day of November, 1908:—

1. All dogs shall be kept in a safe enclosure or chained up.
2. Dogs may be taken out for exercise if kept on a leash or chain, held by the person exercising them

3. Every dog found at large at any time during the abovementioned period may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty hereinafter prescribed.

4. Any person contravening any of the above Regulations, or failing to carry out any of the provisions thereof, shall be liable, on conviction, to a fine not exceeding £10 for each offence, or, in default of payment, to imprisonment with or without hard labour, for a period not exceeding one month.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator.

P. D. L. FYNN,

Acting Treasurer.

No. 30 of 1909.

Administrator's Office,

Salisbury, 25th February, 1909.

RABIES.

WHEREAS it has been shown to me that it is expedient to take measures to prevent the spread of rabies in the undermentioned district: Now therefore, under and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise and direct that all dogs in the undermentioned areas, in the native district of Gutu, with the exception of six male dogs at each kraal (to be exempted at the discretion of the Native Commissioner of the district), shall be destroyed by shooting, poisoning, or other approved methods, and that the carcasses of all dogs so destroyed shall be burnt or buried at a depth of not less than three feet below the surface:—

Within a radius of six miles from Tshitsa's Kraal.

Within a radius of six miles from Mount Rosa (Mr. Swartz's store).

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,

Acting Treasurer.

No. 45 of 1909.

Administrator's Office,

Salisbury, 13th March, 1909.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 42, 156 and 228, of 1907, except as to acts done or penalties incurred at the date of the coming into force of this Notice, and except as to officers appointed under Government Notice No. 286 of 1906, whose appointments shall remain valid for the purposes of this Notice, and declare the following Regulations shall have full force and effect in lieu thereof:—

1. All and several the various native districts of Southern Rhodesia are hereby declared to be areas infected with the disease of rabies.

2. Subject to any penalty a dog owner may have incurred under Government Notice No. 285 of 1906 by not registering his dog before the first day of February, 1907, the owner of any unregistered dog liable to registration may register the same at any time after the said date.

3. On and after the date of this Notice becoming operative the owner of every dog arriving at the age of three months, and the owner of every dog imported into Southern Rhodesia after that date, shall register such dog with an official appointed for that purpose, provided that this provision shall not apply to any municipality, township or similar area in which provision for registration exists and is duly enforced.

4. A registration badge shall be issued for each and every dog registered, and the said badge shall be attached to a proper and sufficient collar to be supplied by the owner, which must be placed and kept on each dog registered.

5. A fee to cover the cost of registration and supply of badge in the amount of sixpence will become demandable and payable on registration of each dog.

6. Any dog found at large after the date of this Notice becoming operative, not having and bearing a registration badge duly issued by an official or the local authority, may be summarily destroyed by any person.

7. Any Magistrate, Police Officer, Native Commissioner, Government Veterinary Surgeon, or other official vested with the performance of functions under the "Animals Diseases Consolidation Ordinance, 1904," may, on it appearing to him that any dog or other animal is showing symptoms which justify investigation as to whether such dog or animal is suffering from rabies or not, order the proper detention, isolation and control of such dog or animal, either in the hands of the owner or at some other suitable place.

8. Should any dog show symptoms which lead to the suspicion that such dog may be suffering from rabies, the owner thereof shall forthwith notify the fact to the nearest official vested with powers under these Regulations, who shall immediately report the same to the Chief Veterinary Surgeon, and shall either destroy the said dog or isolate and secure it for further observations.

9. On its appearing that any animal is actually suffering from rabies, any of the above-mentioned officials may order the destruction of such animal, or may himself destroy it, and may further take control of or destroy, if deemed necessary, any animal which has been in contact with a rabid animal or an animal suspected of being rabid.

10. The carcasses of all animals destroyed on account of their being infected with rabies shall be thoroughly burnt by the person or official destroying them, save that such parts as may be required for scientific investigation may be retained under proper precautions. In any case in which a human being has been bitten by a rabid animal, the head of such animal shall, if possible, be taken and sent to the nearest veterinary official.

11. In the event of any outbreak of rabies occurring, all owners of dogs within fifteen miles of such outbreak, or such other area as may be fixed, shall, on notification by any of the above-mentioned officials, or by Government Notice in the *Gazette*, at once place and keep their dogs in a safe enclosure, or chained up, for a period of not less than six weeks from such notification, or such other period as may be fixed, but may be taken out for exercise if kept on a chain or leash held by the person exercising them.

12. Any dog found at large in a notified area at any time during the prescribed period may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty hereinafter laid down.

13. Any person contravening any of the above Regulations, or failing to carry out any of the provisions thereof, shall be liable, on conviction, to a fine not exceeding £10 for each offence; or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding one month.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 46 of 1909.

Administrator's Office,
Salisbury, 15th March, 1909.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare the provisions of clause 11 of Government Notice No. 45 of 1909 to be in force over the area within fifteen miles of Mr. G. Heanley's farm, which area includes the Municipality of Salisbury, for a period of six weeks, from and including the 15th day of March, 1909.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 133 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 7th May, 1908.

IMPORTATION OF PLANTS, Etc., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulation Ordinance, 1904," I do hereby cancel Government Notice No. 211 of 1907 and declare the following to be of full force and effect in lieu thereof:—

1. Until further notice no person shall introduce into this Colony any grape vine, Virginia creeper, or other plant of the family *vitacæa* or any fruit or other portion thereof, from any of the following districts of Cape Colony:—

Aberdeen	Albany.	Alexandra.
Bathurst	Bedford.	Cradock.
Cathcart.	East London.	Fort Beaufort.
Graaff-Reinet.	Glen Grey.	Humansdorp.
Jansenville.	King William's Town.	Port Elizabeth.
Komgha.	Middelburg.	Somerset East.
Peddie.	Queenstown.	Tarka.
Stockenstrom.	Stutterheim.	
Uitenhage.	Victoria East.	

This regulation shall not, however, apply to grape jam, wine, brandy, vinegar or must.

2. If at any time an inspector shall find any grape vine, Virginia creeper or other plant of the family *vitacæa*, or any fruit or other portion thereof introduced into this territory in contravention of this regulation, he shall order the same to be immediately removed from the territory, or the Secretary for Agriculture may order the same to be destroyed without delay.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 197 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 2nd July, 1908.

IMPORTATION OF PLANTS, ETC., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulation Ordinance, 1904," I do hereby provide that the Regulations published under Government Notice No. 133 of the 7th May, 1908, shall not apply to the importation of raisins.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 221 of 1908.

Department of Agriculture,
Administrator's Office,

Salisbury, 30th July, 1908.

IMPORTATION OF PLANTS, ETC., REGULATIONS.

UNDER and by virtue of the powers in me vested by the "Importation of Plants Regulations Ordinance, 1904," I do hereby cancel and withdraw the prohibition contained in Government Notice No. 236 of the 21st November last against the importation of any tree, shrub or vegetable and the fruit, leaves, cuttings, bark or any part thereof from the Orange River Colony.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 249 of 1908.

The Treasury,

Salisbury, 27th August, 1908.

IT is hereby notified for public information that any person who shall cut down for use as fuel, or for any other purposes than *bona-fide* farming, mining or manufacturing purposes, or cause to be so cut down the "Wild Westeria" (native name M'Pakwa or M'poea) tree, will be liable to prosecution for contravention of the provisions of the Forest and Herbage Preservation Act 1859, and upon conviction to a fine not exceeding £100, or to imprisonment with or without hard labour for a term not exceeding six months, or to such fine and imprisonment, or to such imprisonment without a fine.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator,

F. J. NEWTON,
Treasurer.

SUMMARY OF "THE GAME LAW CONSOLIDATION ORDINANCE, 1906," AND REGULATIONS ISSUED THEREUNDER.

The Ordinance divides the game into three distinct classes, described as follows:—

- (a) Birds and Small Buck.
- (b) Bushbuck, Hartebeest, Impala, Lechwe, Pookoo, Roan and Sable Antelope, Sitatunga, Tasessibe, Waterbuck and Wildebeest.
- (c) Royal Game, which includes Eland, Elephant, Giraffe, Gemsbok, Hippopotamus, Inyala, Koodoo, Ostrich, Rhinoceros, Springbuck and Zebra.

The shooting season for Class "A" is as follows:—

In Mashonaland:

Birds from 1st May to 30th September.

Small Buck from 1st May to 31st October.

In Matabeleland:

Birds and Small Buck from 1st May to 31st October.

To shoot in Class "A" a licence costing £1 per annum is required. This entitles holders to hunt in both Provinces during the open season.

Class "B."—The season opens on 1st July and closes on 30th November in both Provinces. The licence fee is £25 for non-residents and £5 for persons having their domicile in Southern Rhodesia. This licence entitles the holder to shoot up to 15 head, which number may be increased to a total of 25 upon payment of a further sum of £15 in the one case and £5 in the other.

Class "C."—The Administrator may, if he is satisfied that the animals are actually required for scientific purposes, grant to the holder of a game licence permission to shoot or capture any of the species included in this Class. Such permit requires a £5 stamp. Applications in writing, together with proof of *bona fides*, should be addressed to the Secretary for Agriculture.

Game for Farming Purposes.—Permits are granted for the capture of Eland, Ostrich, Zebra or other animals for the purposes of breeding or farming. Such permits require a stamp of the value of £1 and remain in force for six months. Application, accompanied by a sworn declaration, should be made through the Secretary for Agriculture or the Civil Commissioner of the district.

Game Injuring Crops.—The occupier of any cultivated land or any person acting under the authority of such occupier, may at any time destroy game actually doing damage in such land.

Elephants on occupied farms, Melsetter.—The destruction of Elephants when found on occupied farms on the High Veldt in Melsetter District is authorised (*Vide* Government Notice No. 284 of 1908).

Tsetse Fly, Hartley District.—Government Notice No. 40 of 1909 withdraws the Close Season for Class "B" in a certain area in the Hartley District until 30th June, 1910, and transfers from Class "C" to Class "B" Eland, Koodoo, and Zebra so far as that area is concerned. This means that these species may be shot by Residents of Southern Rhodesia on a £5 licence, and by non-Residents on a £25 licence, in this area, at any time up to the 30th June, 1910, in addition to the game described in Class "B."

Game in Class "A" may be hunted in the close season ending 30th April, 1909, on private land in the Melsetter District by holders of a licence.

Protected Areas.—No game may be hunted or killed within the limits of the Commonages or Townlands of Salisbury, Bulawayo, Umtali and Melsetter; within a radius of two miles of the Court House, Gwelo, or within the Urungwe Game Sanctuary, as defined by Government Notice No. 237 of 1906.

'Locust Birds' are strictly protected, *vide* Government Notice No. 121 of 1907.

Export of Game.—No living Game or the Eggs of any Game birds may be exported beyond the limits of Southern Rhodesia without a written permit.

Shooting on Private Land.—A licence does not entitle the holder thereof to shoot on private land without the permission of the landowner.

No. 9 of 1907.

NORTH-WESTERN RHODESIA.

WHEREAS there is reason to believe that certain diseases in cattle exist in the Territory of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, and it is therefore expedient to take measures to prevent the spread of such diseases to North-Western Rhodesia.

Now, therefore, under and by virtue of the powers in me vested by Section 2 of His Excellency the High Commissioner's Proclamation, No. 18 of 1906, bearing date the 31st day of July, 1906, I do hereby order and declare and make known as follows:—

1. That Government Notices, No. 2 of 1902, and No. 11 of 1906, are hereby withdrawn, and the following Regulations substituted:
2. The introduction of any bull, ox, cow, heifer or calf or the meat of any such animals, into the Territory of North-Western Rhodesia from the Territories of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, is prohibited until further notice.
3. No person shall introduce into the Territory of North-Western Rhodesia from the Territories aforesaid, any horse, mare, gelding, mule, donkey, sheep, goat or pig, horns or skins, or any kind of vehicle, wagon gear, trek gear, or harness, without having first obtained the special permission in writing of a District Commissioner, Civil Commissioner, or other person thereto authorized by me; and such animals, horses, skins, vehicles, gear, or harness, shall enter the Territory of North-Western Rhodesia at such place, and under such conditions as regards quarantine and disinfection, as shall be ordered by the person issuing such written permission as is above described.
4. Whenever any conditions as to quarantine, isolation, disinfection or otherwise, are imposed, such conditions shall be fulfilled at the sole risk and expense of the owner, consignee, or other person concerned.
5. All live stock imported into the Territory by rail by way of Victoria Falls and Livingstone, shall be inspected at Livingstone Station, and, whenever disinfection is ordered, shall be disinfected at that Station.
6. In the case of live stock consigned to any point on the railway line north of Livingstone Station, the officer authorized to issue the written permission aforesaid shall further order the disinfection of the truck or horse-box in which such stock is being conveyed. Such disinfection shall be carried out at the expense of the owner or consignee of the stock, or other person concerned therein.
7. Consignors and importers of live stock shall give not less than seven days' notice of the arrival of such stock at Livingstone Station. Such notice shall be given to the Civil Commissioner, Livingstone, or to such other official as may hereafter be appointed.

ROBERT CODRINGTON,
Administrator.

By command of His Honour the Administrator,

HENRY RANGELEY,
Acting Secretary.

Administrator's Office,
Livingstone, North-Western Rhodesia,
30th September, 1907.

No. 282 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 24th September, 1908.

"ANGORA GOAT AND OSTRICH EXPORT PROHIBITION
ORDINANCE, 1907."

Exportation to certain States and Colonies permitted.

IT is hereby notified for public information that whereas legislation has been enacted and promulgated prohibiting the exportation of Angora Goats, Ostriches and Ostrich Eggs from the province of Mozambique, the Colony of the Cape of Good Hope, Natal, Transvaal and the Orange River Colony, except to such South African States and Colonies as have enacted similar prohibitive legislation, the exportation of Angora Goats, Ostriches and Ostrich Eggs is *ipso facto* permitted to the Province of Mozambique, the Colony of the Cape of Good Hope, Natal, Transvaal, and the Orange River Colony.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 316 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 15th October, 1908

"ANGOLA GOAT AND OSTRICH EXPORT PROHIBITION
ORDINANCE, 1907."

IT is hereby notified for public information that whereas legislation has been enacted and promulgated prohibiting the exportation of Angora goats, ostriches and ostrich eggs from the territories of Basutoland, Swaziland and the Bechuanaland Protectorates, except to such South African states and colonies as have enacted similar prohibitive legislation, the exportation of Angora goats, ostriches and ostrich eggs is *ipso facto* permitted to the territories of Basutoland, Swaziland and the Bechuanaland Protectorate.

F. J. NEWTON,
Acting Administrator

By command of His Honour the Acting Administrator in Council

P. D. L. FYNN,
For Treasurer

No. 5 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 7th January, 1909.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 207 of 1908, and amend Government Notice No. 217 of 1907, by extending the provision of section 6 thereof to the movement of working cattle in the native district of Ndanga, and that part of the native district of Victoria lying to the north of the Ndanga main road.

W. H. MILTON,
Administrator

By command of His Honour the Administrator in Council.

P. D. L. FYNN,
Acting Treasurer.

No. 6 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 14th January, 1909.

'ANGORA GOAT AND OSTRICH EXPORT PROHIBITION ORDINANCE, 1907.'

EXPORTATION OF ANGORA GOATS TO CERTAIN STATES AND COLONIES PERMITTED.

IT is hereby notified for public information that whereas legislation has been enacted and promulgated prohibiting the exportation of Angora goats from the Territory of German South West Africa, except to such South African States and Colonies as have enacted similar prohibitive legislation, the exportation of Angora goats is, *ipso facto*, permitted to the Territory of German South West Africa.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council

P. D. L. FYNN,
Acting Treasurer

-Ordinance No. 1, 1908.]

[Promulgated 18th December, 1908.

SOUTHERN RHODESIA.

AN ORDINANCE TO FURTHER AMEND THE LAW WITH REFERENCE TO THE
BRANDING OF STOCK.

BE IT ENACTED by the Administrator of Southern Rhodesia, with the advice and consent of the Legislative Council thereof, as follows :—

1. Sections 7, 8, 9, 10 and 13 of " The Brands Ordinance, 1900 " (hereinafter referred to as the said Ordinance), and so much of any other law as is repugnant to or inconsistent with the provisions of this Ordinance are hereby repealed ; but such repeal shall not be taken to affect the validity of any brand duly registered at the time of coming into operation of this Ordinance.

2. No person shall have the right of claiming to have any special form or design of brand allotted to him, but any person requiring a brand shall, on application, and on payment of the prescribed fee, have a brand allotted to him by the Registrar.

3. Section 23 of the said Ordinance is hereby amended by the addition of the following sub-section :—

" (6) The system and procedure to be observed by the Registrar in allotting brands."

4. This Ordinance may be cited for all purposes as the " Brands Ordinance Amendment Ordinance, 1908."

Above is the text of the Ordinance passed during the last Session of the Legislative Council, the object of the Ordinance being to so amend the Brands Ordinance, 1900, as to permit of the system of branding known as the " Three piece system."

Following are the regulations promulgated under the Ordinance, and which brought the new system of registration into operation on 7th January, 1909.

No. 391* of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 17th December, 1908.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

UNDER and by virtue of the powers vested in me by "The Brands Ordinance, 1900," as amended by the "Brands Ordinance Amendment Ordinance, 1908," I do hereby cancel and withdraw the Regulations published under Government Notice No. 204 of 1900, and declare the following shall be in force in lieu thereof, from and after the 7th January, 1909 :—

1. The Registrar of Brands shall have his office in the Agricultural Department. With the exception of the Magistrate of Salisbury, the Magistrate in each district of Southern Rhodesia, and the Assistant Magistrate in each sub-district, shall be a deputy Registrar of Brands for the magisterial district or sub-district to which he is appointed. The offices of the Deputy Registrars of Brands shall be the offices of the several Magistrates.

2. (a) The form of application for registration of a brand shall be that marked "A" in the schedule attached to this Notice.

(b) The form of a certificate of registration shall be that marked "B" in the said schedule.

(c) The form of a transfer of a brand from one registered proprietor to another shall be that marked "C" in the said schedule.

(d) The form of a certificate of such transfer shall be that marked "D" in the said schedule.

3. Each Deputy Registrar of Brands shall keep a register, in the form of Schedule "E" hereto, of all brands allotted within his district under the provisions of the Ordinance.

4. Save as hereinafter provided, every registered brand shall consist of two letters and a numeral of plain and uniform pattern; and the first of the letters shall indicate the magisterial district or sub-district in which the holding is situate on which the brand is to be used, and shall be placed above the numeral and letter comprising the brand, so as to be in triangular form.

5. One brand and no more shall be allotted to any person in one magisterial district or sub-district.

6. The size of the characters branded on stock shall not be more than three inches in height nor more than two inches in width.

7. An applicant for a brand shall be allotted the next vacant brand assigned to the district in which he is located, as set forth in Schedule "F" hereof.

8. Each Deputy Registrar shall keep a list of brands assigned to his district, for the inspection of applicants for brands.

9. There shall be payable to the Registrar or Deputy Registrar :—

(a) For every separate registration of a brand, 5s.

(b) For every transfer of a brand, 5s.

10. All brands shall be imprinted on stock as follows :—

(a) In the case of horses, mules or donkeys, the first brand shall be imprinted either on the near side of the neck or near rump, and any second or subsequent brand shall (where there is sufficient space for such purpose) be imprinted on the same part of such animal, and at a distance of not less than one and a half inches from and directly underneath last imprint, according to the table herein set forth.

Where there is not sufficient space for the purpose, then such second or subsequent brand shall be imprinted on the part of such animal next in order, according to the following table :—

- i. Off Neck or Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(b) In the case of cattle, the first brand shall be imprinted on the near rump or thigh of the animal, and every second or subsequent brand shall be imprinted at a distance of not less than one and a half inches from and directly underneath the brand last imprinted, according to the following table :—

- i. Off Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(c) In the case of sheep and goats, the first brand shall be imprinted on the near shoulder, and all second or subsequent brands in the following order :—

- i. On Near Side or Ribs ;
- ii. Near Rump (or Thigh) ;
- iii. Off Shoulder ;
- iv. Off Side or Ribs ;
- v. Off Rump (or Thigh).

(d) In the case of ostriches :—

- i. On near Thigh ;
- ii. On Off Thigh.

11. Each proprietor of a registered brand shall have the right, in addition to imprinting his brand in the manner above prescribed, to place such brand on the ears of such animals by punching, tattooing or ear-rivets.

12. The owner of any brand may surrender the same, and the Registrar shall, on receipt of notice thereof, cancel the registration by notice in the *Gazette*.

13. When it appears to the Registrar, upon the report of a Deputy Registrar, Native Commissioner, or Cattle Inspector, that a registered brand is not in use, he may cause notice thereof to be given to the owner thereof, calling upon him to show cause why the same should not be cancelled ; if cause is not shown to the satisfaction of the Registrar within six months after such notice, he may cancel the brand.

14. No brand which has been surrendered or cancelled shall be re-allotted until a period of five years from such surrender or cancellation has elapsed.

15. The Registrar shall, at the end of each quarter in every year, or as soon thereafter as possible, transmit for publication in the *Gazette* a statement, in the form of Schedule "E" hereto, of all brands registered under the Ordinance up to the last day of such quarter.

16. The Registrar shall allot a brand to every public pound already or hereafter to be established, and shall register the same.

The first character of every such brand shall be a diamond, and the second the dominant letter of the magisterial district or sub-district, and the third a numeral, the dominant letter to be placed above the diamond and numeral so as to form a triangle ; and the Poundmaster shall, on sale of any stock impounded therein, brand the same with such brand on the portions and in

the order prescribed in these Regulations, to show that the said brand is the last brand at that time imprinted on such stock; and any Poundmaster who shall fail to comply with the provisions of this section shall on conviction be liable to a fine not exceeding £5.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council

P. D. L. FYNN
Acting Treasurer.

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SCHEDULE A.

APPLICATION FOR A BRAND

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

To the Deputy Registrar,

.....
Herewith ^{we} I enclose the prescribed fee of.....and request that you will allot and register a brand for the holding or place mentioned in the Schedule below.

Name of Applicant in full.	Address.	District or Sub-district for which Brand is required.

Date.....

.....
Applicant.

SCHEDULE B.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No.....
.....day of.....

I hereby certify that the brand shown in the diagram at foot hereof was duly registered on the date and as the brand of the person(s) therein set forth in the schedule hereto.

Owner(s)' full Name.	Address.	District for which Brand is registered.	Date of Registration.

Fee paid.....

Diagram of Brand.....

(Signed).....

Registrar of Brands

SCHEDULE C.

MEMORANDUM OF TRANSFER OF BRAND.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

We, ...being the registered owner(s) of the
 I, ...brand set forth in the schedule hereto, do hereby agree to the transfer of the
 same to.....of.....and hereby
 request that the same may be registered accordingly. And ^{we} I
, the second undersigned, do also hereby agree to the said
 transfer and enclose the fee therefor (..... Shillings).

Witness.....Owner.

Address.....

Witness.....Transferee.

Address.....

Brand.	Name and Address of Registered Owner of Brand.	District where Brand is Registered.	No. of Certificate.	Date of Registration.

SCHEDULE D.

CERTIFICATE OF TRANSFER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No.....Date.....

This is to certify that the brand shown at the foot hereof was this day
 transferred from.....of
 to.....of.....

Fee paid £.....Dated this.....day of

.....

Registrar of Brands.

Brand.	Transferee's Name and Address.	District where Brand is to be used.	No. of Certificate.	Date of Registration.

SCHEDULE E.

DISTRICT BRANDS REGISTER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

Name of Registered Owner.	Address.	District for which Brand is Registered.	Particulars of Brand.		
			Brand Allotted.	No. of Certificate.	Date of Registration.

SCHEDULE F.

Brands allotted to different magisterial districts and sub-districts.

Dominant Letter.	District denoted.					Brands Series.
A	Salisbury	..	..	..	..	A 2 A and variations.
						A
						A 2
B	Bulawayo	..	..	..	..	B
						2 A
						B
						A 2
C	Charter	..	..	..	..	C
						2 A
						C
						A 2
E	Belingwe	..	..	..	..	E
						2 A
	(Sub-district of Bulawayo)	..	..	..	..	E
						A 2
F	Mangwendi	..	..	..	..	F
						2 A
	(Sub-district of Salisbury)	..	..	..	..	F
						A 2
G	Gwelo	..	..	..	..	G
						2 A
						G
						A 2
H	Hartley	..	..	..	..	H
						2 A
						H
						A 2
J	Bubi	..	..	..	..	J
						2 A
	(Sub-district of Bulawayo)	..	..	..	..	J
						A 2
K	Wankie	..	..	..	..	K
						2 A
	(Sub-district of Bulawayo)	..	..	..	..	K
						A 2

Dominant Letter.	District denoted.	Brands Series
L	Lomagondi	L and variations. 2 A
	(Sub-district of Salisbury)	L A 2
M	Mazoe	M 2 A
	(Sub-district of Salisbury)	M A 2
N	Bulilima-Mangwe	N 2 A
	(Sub-district of Bulawayo)	N A 2
P	Mafungabusi	P 2 A
	(Sub-district of Gwelo)	P A 2
R	Chibi	R 2 A
	(Sub-district of Victoria)	R A 2
S	Melsetter	S 2 A
		S A 2
T	Tuli	T 2 A
		T A 2
U	Umtali	U 2 A
		U A 2
V	Victoria	V 2 A
		V A 2
W	Gwanda	W 2 A
	(Sub-district of Bulawayo)	W A 2
X	Makoni	X 2 A
	(Sub-district of Umtali)	X A 2

NOTE.—Reserved for distribution (if required), all brands with the numerals as dominants, thus—2 AA to 9 ZZ. Permanently reserved, the letters O and I (to be used exclusively as numerals). The letters O, Y and Z are unallotted. The letter D reserved for Government Departments.

Departmental Notices.

As Assistant Magistrates have not been appointed to all the Districts and Sub-districts to which a series of Brands have been allotted, the registration of Brands in

such Districts will be carried out by the Officers enumerated in the following notice, which was published for the information of stock-breeders :

DEPARTMENT OF AGRICULTURE.

NOTICE.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

With reference to the regulations published under Government Notice No. 391 of 1908, it is hereby notified for public information that the undermentioned Officers are the Deputy Registrars and Registrars of Brands for the Districts or Sub-districts set opposite their names.

Districts and
Sub-districts.

Deputy Registrar.

Bubi	Assistant Magistrate, Inyati.
Bulalima Mangwe	Assistant Magistrate, Yegwani.
Charter... ..	Magistrate, Enkeldoorn.
Chibi	Magistrate, Victoria.
Mafungabusi ...	Magistrate, Bulawayo.
Makoni... ..	Magistrate, Umtali.
Mangwendi ...	Registrar of Brands, Salisbury.
Wankie	Magistrate, Bulawayo.
Tuli... ..	Magistrate, Gwanda.

E. ROSS TOWNSEND.

Registrar of Brands.

Salisbury, 21st January, 1909.

For the information and guidance of Stockowners the following notes and directions are published :—

1. All brands registered under the old system prior to the 7th January, 1909, will continue to be current, except in cases where the registered owners have ceased to use them ; all obsolete brands will in due course be cancelled.

2. Printed forms of application for brands have been supplied to every Deputy Registrar of Brands, *i.e.*, to the Magistrates and Assistant Magistrates of the Districts and Sub-districts to which a series of brands have been allotted.

Applicants for brands should fill in the form, and forward, with the registration fee, to the Deputy Registrar of the District for which the brand is required.

On receipt of the application the Deputy Registrar will allot the next brand vacant on the list, and will issue a Registration Certificate, after which the applicant will be entitled to the exclusive use of the brand.

3. All brands will consist of two letters of the alphabet and a numeral of plain and uniform pattern, and will be in the form of a triangle, the dominant letter of the District forming the apex, and a numeral and letter forming the base, thus for the district of Salisbury the first brand allotted would be "A"

2 A

4. The maximum size of a brand is fixed at three inches in height, and two inches in width; the object of limiting the size of brand is to prevent the use of brands which make an unsightly impression, causing unnecessary pain to the animal, and damage to the hide.

Stockowners are urged to make their brands as small as possible consistent with clearness, and with as fine a burning edge as possible, to insure a sharp, clear impression on the hide.

5. Rules for branding.

These are clearly set forth in Section 10 of the regulations which has been printed on the back of the Registration Certificate for the guidance of owners.

The order of placing the brand as laid down in the regulations must be strictly followed.

The object in prescribing the order in which brands are placed on an animal is to insure that the owner of lost, straying, or stolen stock being readily traced. If brands are placed indiscriminately on an animal which has changed hands frequently, it is not possible to trace the registered owner without considerable delay ensuing, whereas if brands are impressed in proper rotation, the owner of the brand last impressed on the animal can be readily traced.

6. The owners of registered brands have the right to, in addition to imprinting their brands in the order prescribed, place such brand on the ears of animals by punching, tattooing, or ear-rivets.

7. Registered owners of brands have the right to surrender their brands, and brands surrendered will be cancelled. In cases where it is found that registered brands are not being used, the Registrar may call upon the owner to show cause why it should not be cancelled, and if cause is not shown, such brand may be cancelled. No brand which has been surrendered or cancelled can be re-allotted for 5 years from date of cancellation.

8. With a view of ensuring accuracy and uniformity in the making of branding irons, special arrangements will be made with local firms of blacksmiths to supply branding irons at a contract price.

An applicant for a brand may, on depositing the cost of branding iron, receive from the Deputy Registrar a requisition for a branding iron to be supplied by the contractor.

DESTRUCTION OF WILD CARNIVORA, ETC.

It is hereby notified for public information that the Notice issued by this Department, dated 8th June, 1906, offering certain rewards for the destruction of wild carnivora, etc., will, *after 31st March, 1908*, cease and determine, and thereafter rewards will be paid only on the scale and conditions herein set forth.

2. Rewards will be paid as follows:—

For each Lion	...	£3	0	0
„ Leopard	...	1	0	0
„ Cheetah	...	1	0	0
„ Wild Dog	...	0	10	0
„ Crocodile, of not less than 3 ft. in length	...	0	10	0

3. Rewards will be paid to Europeans by the Magistrate or Native Commissioner, and to natives by the Native Commissioner of the district, within three months of the date upon which the animal is killed, on a declaration made in the form of the annexure hereto.

4. In proof of destruction, applicants for rewards will be required to produce and surrender, in the case of Lion, Leopard or Cheetah, the skin with the tail not severed, and in the case of Crocodile or Wild Dog, the unskinned head.

5. The skins and heads of animals for which rewards have been paid shall be the property of the Government, and shall be disposed of in such manner as may be decided on.

E. ROSS TOWNSEND,

Secretary for Agriculture.

FARM APPRENTICES.

The Secretary for Agriculture would be glad to receive the names of farmers willing to take students from overseas for instruction in South African farming.

He also wishes to make it known that a large number of young Colonials with experience are anxious to obtain situations on farms in Rhodesia. Farmers are now invited to state on what terms they would offer to take these—sending in the full particulars to this Department as early as possible.

STRYCHNINE.

Stockowners can obtain a limited quantity of strychnine for the destruction of carnivora at a cost of 4s. 6d. per ounce.

GOVERNMENT STALLION FOR PUBLIC STUD.

The Stallion "Robber Knight" has been returned to Salisbury, where his services for a limited number of mares will be available until further notice, free of charge.

Applications, giving full particulars of the mares to be served, should be addressed to the Veterinary Department, Salisbury, where further particulars can be obtained.

The owners of mares brought to stud will have to make all necessary arrangements for attendance, stabling, and feeding of their animals, as the Department can take no responsibility whatever.

As the number of mares which can be served is very limited, the Veterinary Officer in charge is instructed to refuse service if any mare submitted is suffering from any hereditary disease, or is of an inferior type.

Pedigree.—"Robber Knight" by "Sir Hugo," *ex* "Fritters" by "St. Simon."

The Chief Veterinary Surgeon requests that all Official Correspondence be addressed to the

CHIEF VETERINARY SURGEON,

Box 123,

SALISBURY.

Communications referring to various Departmental matters are frequently addressed to him personally, with the result that they remain unopened and unattended to in case he is absent on duty.

VAPORITE.

The new preparation, "Vaporite," suitable for the destruction of cut-worms, wire-worms, white ants, and other soil-infesting pests, can be obtained from the Department in quantities of not less than 2 cwt. at 17s. 6d. per cwt. Application to be accompanied by remittance covering cost and transport charges.

TOBACCO SEED.

The following varieties of tobacco seed may now be obtained by planters from this Department at the prices named, which include postage. Orders must be accompanied by remittance.

	per oz.	
	s.	d.
Turkish, Yenedje, Xanthi, Aya Solouk	1	6
Turkish, Cavalla	1	6
Goldfinder (a bright Virginia leaf, when flue-cured, brighter than Hester)	1	2

TOBACCO SEED BED COVERING.

A large supply of calico for covering tobacco seed is now available. It can be obtained from the Anglo African Trading Company at Salisbury, Bulawayo, and Gwelo. Price 2½d. per square yard.

CULTURE OF TOBACCO.

This book, by G. M. Odium, containing the History of the Tobacco Plant from seed to manufacture, can be obtained from this Department. Price 2s., post free 2s. 4d.

WATER BORING.

It is hereby notified for the information of farmers that the Government has secured the services of Mr. H. M. Oakley, for a period of three months, for the purpose of advising as to the prospects of obtaining a sufficient supply of water by boring, and the best sites for sinking bore-holes.

Mr. Oakley will arrive early next month, and those wishing to avail themselves of his advice, for which no charge will be made, should at once communicate either with the Secretary of their Farmers' Association, the Civil Commissioner of the district, or the undersigned.

ERIC A. NOBBS,

Director of Agriculture.

Department of Agriculture,
Salisbury, March 2nd, 1909.

DISTRIBUTION OF SEED GRAIN FOR EXPERIMENTAL PURPOSES BY THE DEPARTMENT OF AGRICULTURE.

With the view of gaining further information as to the best varieties of the different crops for autumn sowing under irrigation, a quantity of seed is being procured by the Department of Agriculture for distribution to farmers throughout Southern Rhodesia.

The different seeds will, as far as supplies admit, be delivered free at their nearest station, to farmers making application, and undertaking to furnish the Department with reports of the results attained and methods of cultivation.

Seeds will be given out in quantities to sow from a quarter to half an acre of each variety, and not more than two sorts to each applicant.

It must be understood that the Department in no way guarantees the suitability of these seeds. It is with the object of ascertaining their value that these trials are instituted, and to gain experience which may be of use to the farming public in the future.

It should be realised that the parcels supplied are purely for experimental trial. It is not proposed to sell seed to farmers for growing on a large scale, this being regarded as more properly the sphere of commercial firms.

The following is a list of the seeds at present available:—

Gluyas Wheat (Rust resistant).
 Rietti Wheat (Rust-resistant).
 Cape Barley (Six Row).
 Chevalier Barley (Two Row).
 Beardless Barley.
 Barley Wheat.
 Rye.

INQUIRIES.

Farmers are reminded that in all matters relating to agricultural practice, advice is given by the Department in response to inquiries made by them individually.

In particular subjects, such as disease among crops, insect pests and the like, specimens should be sent to the Department, together with as full details as possible.

Inquiries will be made on behalf of farmers who want farm machinery and appliances, seeds, trees, etc.

All communications should be addressed in the first instance to the Director of Agriculture, Salisbury.

INSTRUCTIONS FOR TAKING SAMPLES OF SOIL FOR ANALYSIS.

In taking samples of soil for analysis, it is important that they should be of a truly representative character; and, when sending them in to the Department, it should be stated for what purpose it is intended to use the land, whether for cereals, tobacco, lucerne, fruit-growing, etc. If much difference exists in the area to which the analysis is intended to refer, a separate sample of each of the different soils should be forwarded.

Samples should be taken as follows:—

Dig several holes 3 feet deep, the number varying according to the size of the land, care being taken to avoid tree roots, and hills, or any spots marked by rank vegetation or the absence of vegetation. Select the hole showing the most representative character, and from the side of it cut a section with a knife or trowel, about 2 inches square and 10 inches deep, first clearing off the top vegetation. Place this section in a

bag by itself (No. 1), then take another section below the first, about 14 inches deep, and put in a separate bag (No. 2); below the second section take a third, about 12 inches deep, and place in a third bag (No. 3). If rock is encountered before this section can be cut, send a sample of the rock, about 1 lb. weight.

When the sample is of cultivated land, the top section should be taken from each of the holes made and thoroughly mixed, and about 4 lbs. of the mixture sent for analysis; 2 or 3 lbs. each of the other sections, taken at the depths mentioned above, from one hole only, is sufficient. When forwarding the samples, as much information as possible should accompany them; such as, whether the situation is near a river, if from sloping or level ground, the behaviour of the land under much rain or severe drought, if it yields good crops or poor, if kraal or other manures have been applied recently and in what quantities.

Samples should be addressed to: The Secretary for Agriculture, Agricultural Department, Salisbury, and accompanied in all cases with full particulars as set forth above. No attention will be paid to samples sent without full details.

Schedule of Charges made for Analysis in the Agricultural Laboratory, Salisbury.

	£	s.	d.
1. Estimation of two or three constituents in mineral or other manures	0	15	0
2. Analysis of water for stock or irrigation purposes	1	0	0
3. Estimation of Lime or Phosphoric Acid in rock specimens	0	15	0
4. Partial analysis of soil—Mechanical analysis and determination of one or two constituents	2	0	0
5. Complete analysis of soil	3	0	0

At present no charge will be made to *bona fide* farmers. The charges in the above schedule are for products sent in by merchants, dealers, and others interested in trade.

The Analyst will exercise his discretion as to the examination of all samples, whether they are of sufficient importance for determination.

The right of publishing the result of any analysis is reserved by the Department.

EXPORT OF SOUTH AFRICAN HAY TO GREAT BRITAIN.

The following wire has been received by His Honour the Administrator from His Excellency the High Commissioner relating to the export of hay from South Africa:

“Johannesburg, April 27th, 1908.

“I have received notification from the Secretary of State for the Colonies that, owing to risk of spread to farm stock in Great Britain of disease known as African Coast Fever through the medium of hay from South Africa, Board of Agriculture are taking steps under Diseases of Animals' Acts, 1894 to 1903, to prevent its importation unless and until they are satisfied that disease has been eradicated from South Africa.

“You should accordingly warn intending shippers that His Majesty's Government will probably take steps to prevent such hay being landed in Great Britain. The Board of Agriculture notifies that its interpretation of the term ‘Hay’ includes all dried fodder plants that have not had their seeds removed, and that term as used in this correspondence is intended to cover oat hay, vetch hay, lucerne hay (Alfalfa), as well as ordinary grass and clover hay.”

Editorial Notices.

Original subscribers to the *Journal*, who have complete sets of the earlier numbers to dispose of, are requested to communicate with this office, as numerous enquiries for the first and second volumes, now out of print, have been received.

Subscriptions to the *Journal* (5s.), issued bi-monthly, should be addressed to the Director of Agriculture, Agricultural Department, Salisbury. Only communications relating to the literary department should be addressed to the Editor, and if an answer is required in the

pages of the *Journal*, should reach this office not later than the 15th of the month preceding publication. Subscribers are requested to notify immediately the non-delivery of the *Journal*.

Farmers requiring latest market prices for produce and live stock at Kimberley, Johannesburg, Bulawayo, Gwelo, Salisbury, Umtali, and Beira, can obtain same from this office by next mail or prepaid wire.

Advertisements will be accepted from *bona fide* farmers wishing to effect sale, purchase or exchange of produce, live stock, or farm implements, at a minimum charge of 2s. 6d. per insertion of 20 words. Extra words will be charged for at the rate of 1s. for every ten words.

Applications for Advertisement Rates to be made to J. Kapnek, Sole Advertisement Contractor for "Rhodesian Agricultural Journal," P.O. Box 91, Salisbury and Box 45 Bulawayo.

By Appointment to



His Majesty the King.

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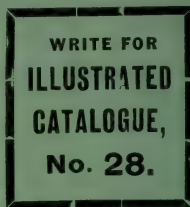
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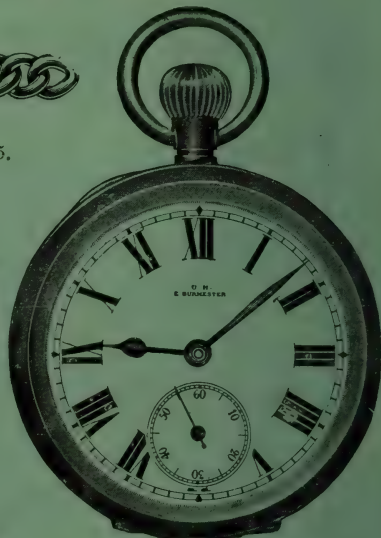


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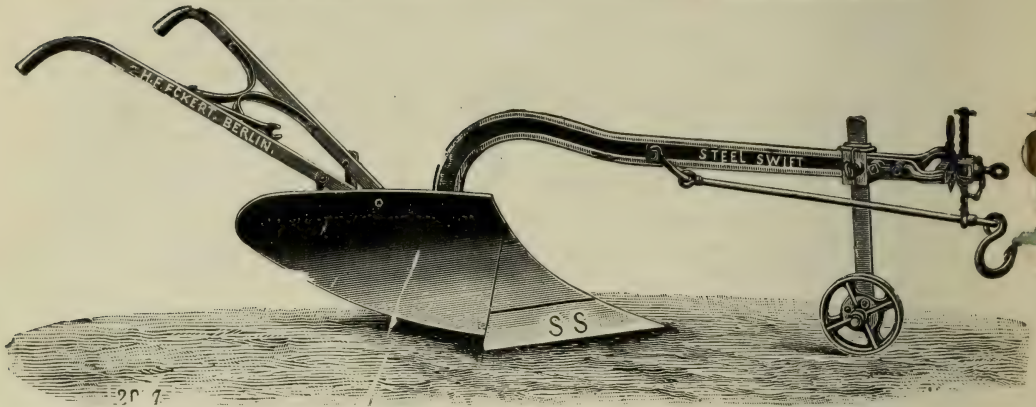
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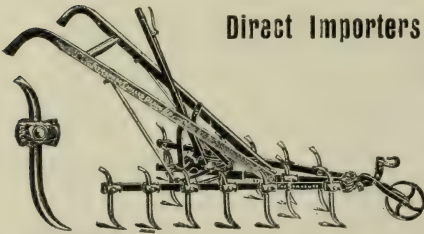
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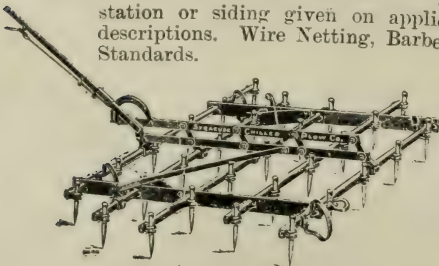
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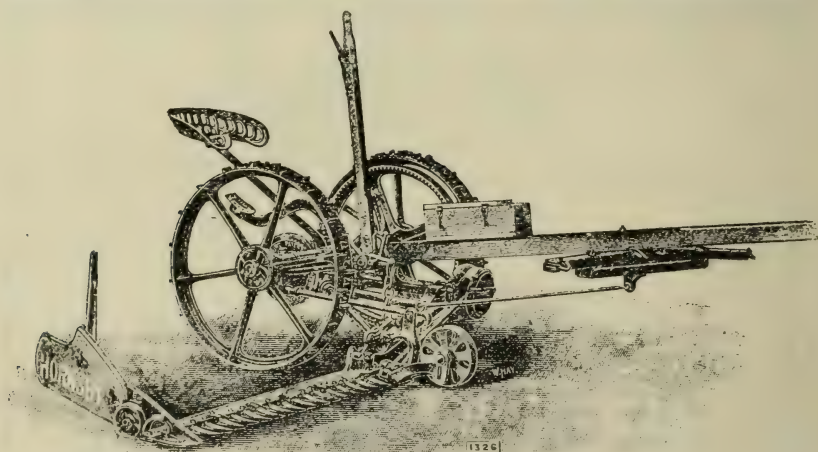
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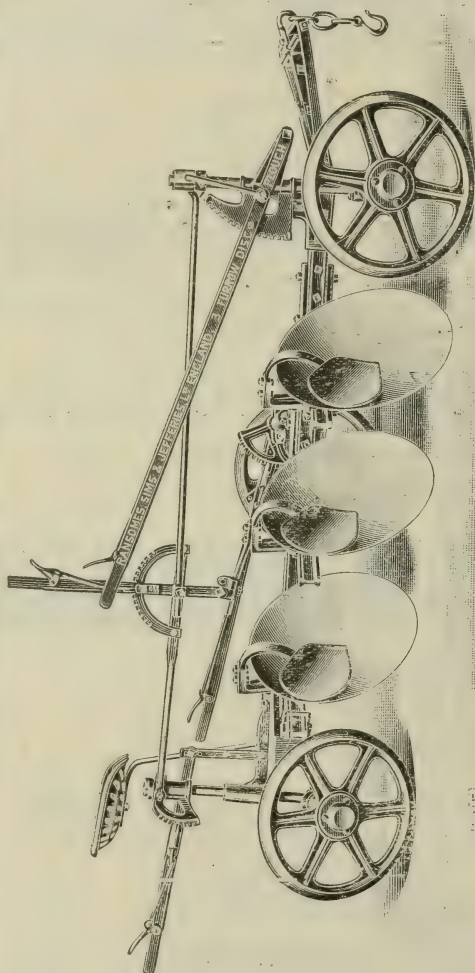
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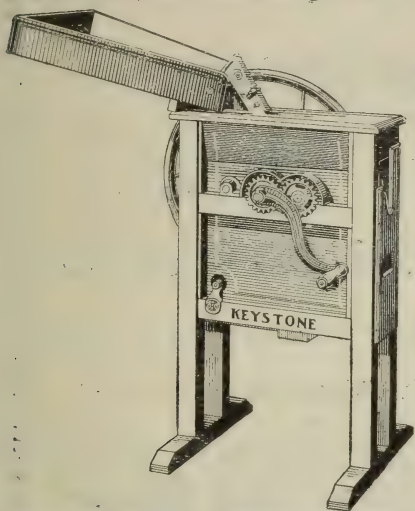
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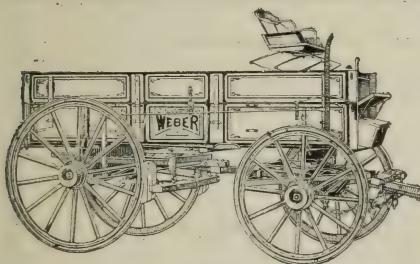
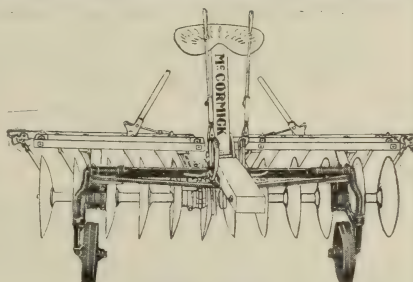
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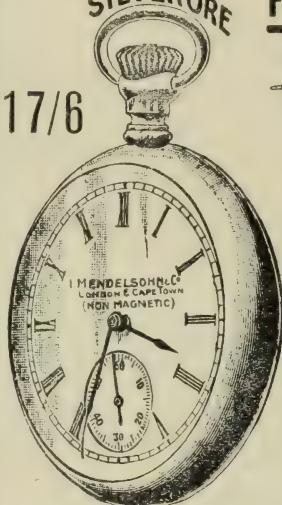
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THE RHODESIAN AGRICULTURAL JOURNAL

Issued by the Agricultural Department.

VOL. VI.—No. 5.]

JUNE, 1909.

[5s. per annum.

Editorial.

THE COMING SHOW SEASON.

There is every prospect of the Agricultural Shows this year quite eclipsing all past records. Not only is there more to show but there is an increased interest abroad and a healthy rivalry coupled with a very apparent desire to see what others are doing and to learn new and better ways. It is the unavoidable result of large farms and a sparse population that opportunities of intercourse and self improvement are rare.

Old settlers, if any can be called old in such a new country, have experience gained at great cost, while recent arrivals bring with them ideas from many different quarters of the globe and no better place exists than the show yard for bartering these assets, for demonstrating what has been done and indicating what can yet be accomplished. The restrictions on the movement of stock may interfere with the cattle classes in some cases, but in the hope that these may be removed in time, the Salisbury Society has decided to make preparations for this all important section.

THE PROPOSED CO-OPERATIVE AGRICULTURAL SOCIETIES ORDINANCE.

The history of the co-operative movement throughout the world has ever been from small beginnings to great achievement. Not without misgivings, and in the face of opposition, the Co-operative Agricultural Society,

established last year by a group of Salisbury farmers, has persisted and expanded, and become such an established institution that already legislative recognition of its existence is called for. This has been found necessary to provide for the registration of such bodies, to secure that they shall have a legal constitution and be capable of being sued and of suing in proper form.

True co-operation can well exist without subventions, grants in aid or other state interference, and now that this necessary formality is being arranged there is no reason why similar organisations should not spring up and spread all over the country.

This matter might well receive the earnest consideration of our Farmers and Land Owners Associations. The different activities possible to co-operative societies are really infinite but are condensed in a clause of the draft ordinance which reads:—"A co-operative agricultural society may, subject to the provisions of this Ordinance, be formed for all or any of the following objects, viz., of:—

(1) disposing of the agricultural produce and live stock of any of its members in the manner most profitable to the society; or

(2) manufacturing or treating on joint account the agricultural produce of its members, and of disposing, in the manner most profitable to the society, of the produce so manufactured or partly manufactured; or

(3) initiating schemes of irrigation or water boring, or of furthering and developing existing irrigation and water boring schemes; or

(4) purchasing, hiring, or otherwise acquiring, and working on behalf of its members, agricultural implements or machinery; or

(5) purchasing, hiring, or otherwise acquiring, and using and controlling on behalf of its members, breeding stock; or

(6) purchasing, or otherwise acquiring on behalf of and supplying to its members agricultural implements and machinery, stock, feeding stuffs, seeds, fruit trees, manure and other farming requisites; or

(7) commencing, acquiring, and carrying on supply stores under a co-operative system for disposing of and supplying agricultural produce; or

(8) commencing and carrying on insurance societies for its members under a co-operative system; or

(9) acquiring and distributing information as to the best manner of carrying on farming operations profitably; or

(10) acquiring by lease, purchase, or donation, and holding, any immovable property in the Territory for the better carrying on of any of the objects of the society; or

(11) raising money on loan for any of the lawful objects of the society; or

(12) any other lawful object which the Administrator may from time to time permit for furthering the interests and development of agriculture in this Territory.

Co-operation aids the wealthy and established farmer as well as his poorer and struggling brethren for whom however it is specially adapted, securing to them the advantages otherwise reserved to the capitalist. The root idea is to profit from the number of individuals, each knowing the financial standing of his partners, accepting jointly and severally the responsibility for debts incurred on behalf of any member, and they in turn being safeguarded by the articles of their association. That much may be done to assist Co-operative Agricultural Societies by Government is true, but the aim of the members of such associations is not primarily to exploit these artificial facilities but, by helping each other, to help themselves.

Attention is directed to the constitution of the new Co-operative Agricultural Society at Umtali given on another page.

PROPOSED NURSERIES ORDINANCE.

In view of the increasing attention which is being paid to the propagation of plants and trees, particularly of grafted fruit trees for sale in Rhodesia, it has been considered desirable to institute safeguards for the prevention of the spread of disease to orchards and farms from the nurseries.

Similar legislation exists in all the South African Colonies, and in all other advanced agricultural countries, and in addition we are protected from the introduction of pests from abroad by effective Plant Importation Regulations and inspection by the customs authorities.

But a possibility of diseases and insect plagues being spread broadcast over the land now exists from local nurseries, and this it is proposed to combat by periodic inspection coupled with compulsory destruction or treatment and quarantining of diseased plants until cured.

Provision is made for registration of all nurseries from which plants and trees are sold, for controlling distribution from them, and imposing suitable penalties for breach of the regulations. In this way it is hoped to prevent much loss to fruit growers and others and to ensure the sale to them of nothing but sound, healthy material,—a great boon.

FOUL BROOD.

The primary aim of a draft Ordinance introduced into the Legislative Council this season, is "To prohibit or regulate the introduction into this Territory of Animals or Substances which might be injurious to the interests thereof" is to bring the laws of this Territory into conformity with those of the neighbouring Colonies for the protection of South Africa from danger in the form of an insidious disease affecting bees, and termed "Foul Brood." This is the cause of considerable losses to apiaries annually in Europe, America and Australia.

By exercising certain restrictions on the importation of live bees, beeswax and honey, all of which are possible carriers of infection, South Africa can be preserved from risk of this malady without seriously incommoding commerce in these articles and towards this end the Ordinance is directed. The form is, however, made generally applicable to any similar cases which may in future arise.

A PRIZE COMPETITION. £15 GIVEN AWAY!

Details will be found on another page of a scheme for giving prizes for collections of plants of economic importance. Much is hoped for from this effort and it is hoped that the interest and help will not be confined to school children only although the prizes are for them only.

CATTLE FROM THE CAPE AND ORANGE RIVER COLONY.

The freedom of Southern Rhodesia from Lungsickness and the insidious means by which the disease is propagated render it imperative that the utmost caution be exercised in introducing cattle from the south.

Amongst other precautions taken importers are required to sign a declaration (Annexure B. of Government Notice No. 110 of 1908) to the effect that the herd from which the imported animals are brought has been free of the disease and of all chance of infection for over four years. It has recently been found desirable to amend this form, rendering more strict the assurance that the animals have not been in contact with cattle of antecedents unknown in this respect, and expressly excluding stock which has been exposed for sale in any public market or stock fair. Those interested in the subject should not fail to make themselves familiar with these alterations. The original notice and the amendment are printed on another page.

THE IRRIGATION CONGRESS.

The Government of the Cape of Good Hope has called together a congress of all interested in Irrigation, to be held at Robertson, Cape Colony, on the 18th May, a subject of prime importance to South African Agriculture. Rhodesia was invited to send a representative, and Mr. J. A. Edmonds, President of the Agricultural Union, has kindly consented to attend on behalf of the Territory.

This is the most influential conference of the sort which has yet met and papers of much scientific and practical interest will be read and discussed. Irrigation is not merely a question of interest to the arid portions of this continent, but is a necessity wherever prolonged dry seasons occur, during which, but for lack of water, crops might be grown.

This is eminently true of much of Southern Rhodesia where such staple crops as wheat, oats, barley, rye, and at least one of the two crops of potatoes generally require irrigation. Moreover the conservation of water by weirs and dams, there are difficulties here not known further south. It is fitting therefore that a delegate should attend the conference to enquire and study on our behalf, and no doubt much good will accrue from his visit.

SOUTH AFRICAN NATIONAL UNION.

On his way to attend the Irrigation Conference it has been arranged that Mr. Edmonds will take part in the Congress of the South African National Union. As is well known the object of this Society under the active chairmanship of Sir Pieter Bam, M.L.A., is to promote the use of articles of South African origin both here and abroad and to foster new industries of all sorts. Towards this end a complete system has been devised for the distribution of information to consumers regarding local products, and to growers and manufacturers regarding markets and means of marketing.

Reliable technical advice procurable only, owing to the wide ramifications of the organisation, is freely obtained for members.

It is understood that matters of much importance are to be discussed at the Kimberley meeting.

THE FENCING ORDINANCE.

To the farmers of Bubi district belongs the credit of being the first to avail themselves of the provisions of this law. All formalities having now been complied with, an area of some 700 square miles owned by sixty separate properties is now brought under an Ordinance which enables any farmer desiring to fence his farm to obtain half the cost from his neighbours.

As the general question of fencing is receiving more public attention than ever, full particulars of the procedure to be adopted by those wishing to secure the benefits of the Fencing Ordinance are given elsewhere.

It is the opinion of those best qualified to judge that no single step that can be taken would be of greater effect in diminishing the risk and the ravages of disease amongst cattle, and of facilitating stock breeding in general than the universal use of fences.

AFRICAN COAST FEVER.

With African Coast Fever at Marandellas the last few weeks have been to old hands reminiscent of the earlier days—when rinderpest, Coast Fever, and rebellion, were alternate tragedies in the country. Decisive steps have,

however, been taken, and though some loss has been incurred to a few unfortunate owners of stock, most have only suffered in the stoppage of transport and some uneasiness of mind. A brief history of the outbreak by the Chief Veterinary Surgeon is published in this number.

LUNGSICKNESS.

Farmers will be glad to learn that in Bechuanaland lungsickness is now being vigorously and systematically tackled by the authorities. Since the beginning of the year active measures have been adopted. Extra inspectors have been appointed and affected stock is being slaughtered wherever found. Compensation is paid at the rate of one third of the assessed value, and the natives are co-operating readily, realising the advantages of the liberal treatment and of the benefits to be derived from the suppression of this fell disease.

CATTLE DIPPING TANKS.

The popularity of the method of tick destruction by dipping as a preventive of disease and a material aid in rearing horned stock continues steadily to grow in spite of the scepticism of the ignorant and occasional deaths by misadventure which are perhaps unavoidable until the proper procedure and care of animals before and after dipping is better understood. In Cape Colony this process is now general throughout the tick infested districts where only a few years ago strong objection was taken to its adoption.

The relative merits of rival preparations for the purpose, all based upon arsenic as the tick destroying principle, is still a vexed question, but the effectiveness of the method is undisputed although improvement is not impossible as pointed out in a paper by Mr. Edmonds, M.R.C.V.S.

CATTLE FROM ACROSS THE ZAMBESI.

As will be seen from Government Notice No. 47 of 1909, printed on another page, the necessity of preventing the entrance of cattle from the remote parts of North Western and North Eastern Rhodesia referred to above arose most unexpectedly.

As no grounds existed for believing that this new trouble, if indeed it be new, existed in the Shesheva and Barotse Valley, and to minimise as far as possible the hardship unavoidably occasioned, stock from these Southern areas has been permitted to come down to a quarantine area near Matetsi Station up till a date which will preclude animals from the supposed infected area from being introduced.

A complication arose on the 14th of April, through the report of several deaths amongst cattle intended to be sent South, necessitating a suspension of this movement until enquiries have been made. Before these lines are read no doubt the matter will have been elucidated.

BORING FOR WATER.

By arrangement, Mr. Oakley, a gentleman with a wide South African experience of the subject, is at present visiting farmers throughout Rhodesia to advise them on the subject of sinking bore holes on their farms. Applications for his services to the number of 110 have been received and so far as the limited time at his disposal will admit all will be visited in turn. In arranging for conveyance from farm to farm by the applicant and in details connected with the itinerary the Farmers' Association have proved an invaluable agency. It is noteworthy also how the demand for advice on this subject has varied in different parts of the country; no applications being received from some quarters whilst from one remote district the request came with comprehensive simplicity from "all the farmers"! As far as may be these invitations are being met and Mr. Oakley is likely to have a busy time and an extensive tour during his sojourn in Rhodesia.

A NEW FLY DISEASE.

The action of the Southern Rhodesian Government in excluding cattle from North of the Zambesi, until further investigations have been made, was rendered necessary owing to an announcement by Mr. Montgomery, of the School of Tropical Medicine, Liverpool, of the existence of a fly-borne disease different from the ordinary Tse-Tse Fly disease; and which he alleges can be communicated by blood-sucking flies, other than Tse-Tse.



Typical Milk Cows of the Ost-Friesland Breed.

In the interests of the cattle industry of Southern Rhodesia it was considered essential at once to stop all importation of cattle from the North.

At as early a date as possible enquiries will be set on foot to ascertain whether the statement referred to above is well founded or not. Coming from a recognised authority it is necessary to treat the report very seriously. It is by no means impossible, however, that in the course of a few months the introduction of cattle from North Western and North Eastern Rhodesia may be permitted.

The disease which is attributed to a blood parasite, *Trypanosoma dimorphon*, may already have been in existence for a longer or shorter time in Southern Rhodesia, since it is believed to have been found throughout Portuguese East Africa, in which case being already infected there is little if anything to be gained by exclusive measures. Again the question of conveyance by hosts other than Tse-Tse has yet to be scientifically confirmed. Nothing can be done until these problems have been solved by systematic investigation.

EAST FRIESLAND CATTLE.

A joint order has just been despatched to Europe on behalf of those very enterprising breeders Messrs. MacArthur and Maclaurin of Salisbury for 12 head (one bull and eleven heifers) to augment their herds of pure bred Friesland cattle. They desire to specialise in a milk producing line and are sparing no pains to secure the best possible stock. In turning to Oost Friesland they open up a new source so far as Rhodesia is concerned but one in which the great family of black and white Friesch, Dutch, or Holstein cattle has become highly specialised, particularly for milk production, avoiding, however, the great size, with its consequent need of high feeding, characteristic of certain other branches of the great breed. To facilitate acclimatisation, but at the cost of having to wait longer for any return, the importers have wisely decided to limit themselves to animals under nine months old. The arrival of the consignment will be looked forward to with interest. Illustrations of typical specimens of the breed are given.

COLLECTION OF AGRICULTURAL PRODUCTS.

Distinct from the botanical collection yet akin thereto a collection is being formed at the Department of Agriculture of samples of produce of all sorts, hay, forage, cereals of all sorts, beans, buckwheat, linseed, groundnuts and other crops, also specimens of fibre, wood, fruit, basket work, and so on, in fact anything saleable that is grown and made in Rhodesia. Besides these there are being brought together by degrees specimens illustrative of diseases of animals and crops, and foreign grains of possible interest to us. Duplicates and additional samples are required for sending abroad to try to give the public of South Africa, England, and Europe an accurate idea of the possibilities of Rhodesia.

Samples of interest will be gratefully accepted by the Director of Agriculture, Salisbury, and larger quantities will be willingly paid for if of sufficient interest to send away. A small commencement has as yet only been made, but in time it is hoped that this collection will become of real utility and interest to visitors, both farmers and strangers alike.

TURKISH TOBACCO AT THE CAPE.

Some interesting information to tobacco growers appears in the April number of the "Cape Agricultural Journal" in an article by Mr. L. M. Stella, Turkish Tobacco Expert.

The article deals with the results of a series of experiments with Turkish Tobacco carried out on several farms and Government Experiment Stations. During 1907-8 experiments were undertaken in nine different districts, and a successful crop of 13,000 lbs. was raised and sold at an average price of 1s. 11d. per lb., which was 5d. per lb. in excess of the previous year's crop.

Failures took place in two cases, those of Riversdale and Mossel Bay Districts. The cause of these failures was mildew, which developed owing to the heavy mists.

There is now under cultivation on fourteen private farms nearly 70 acres, which it was estimated would yield 35,000 lbs. of Tobacco, but severe drought and the presence of cutworms has had a deterrent effect, and the expectations are now not so good.

OPENINGS WANTED IN RHODESIA.

One of the signs of the growing outside interest in Rhodesia as an agricultural and pastoral country is the increasing stream of applications made to the Department of Agriculture by young men seeking openings on farms with a view of acquiring experience of the conditions of the country before taking up land for themselves. The applicants are of all classes, colonial and home-born, experienced and city-bred, with means and without, or with prospects. Some are in England, many at the Cape, and some are on the spot. Apart from those who desire to take up land at once there are many who wish to serve as pupils or foremen, or managers for absent owners, and others who seek openings of a non-agriculture sort.

The established farmer occasionally has need of such and may from lists kept at the Department of Agriculture be able to supply his needs. Correspondence is invited and while everything possible will be done to bring suitable employer and applicant together, of course no guarantee or recommendation can be furnished beyond testimonials as supplied to the Office.

This question of mud-students, farm pupils, apprentices or assistants is a difficult one to solve everywhere the world over, but especially here with so much that is different to elsewhere as regards labour, methods, crops, and seasons. Previous experience is not necessarily a recommendation; common sense, patience, and adaptability are the chief desiderata. Some think that new chums must gain their experience and pay as bitterly for it as those first in the field, forgetting apparently that every new man settled in this country is a gain to those already here and that to secure and extend our markets additional production is the chief need, while the bogey of competition is a vain fantasy engendered of an inadequate understanding of economic laws.

Cattle in Southern Rhodesia.

By ROBERT WALLACE, Professor of Agriculture and Rural Economy in the University of Edinburgh.

A CATTLE COUNTRY.

Southern Rhodesia is essentially a live stock country, and for the present by far its greatest possibilities lie in the Bovine branch of the industry. I formed a very high opinion of its possibilities for the breeding and raising of cattle for beef, for the dairy and for draught purposes, in spite of the fact that within comparatively recent years horned stock has suffered wholesale depletion from Rinderpest, and latterly from East Coast fever. The means by which any wide-spread outbreak of Bovine disease can be prevented are now so well understood that no fear need be entertained of any outbreak which could end in disastrous consequences to the country as a whole.

GRAZING.

As a grazing country for cattle during the period of rainfall and luxuriant growth Rhodesia has no equal in South Africa, and it would be difficult to find her superior in any part of the world.

NATIVE CATTLE.

Few Europeans have been contented to breed only native cattle and improve them by selection of the best, because of their alleged slowness of maturity. The result has been that pure-bred bulls from at least six or eight European breeds have been introduced from time to time and the progeny is mongrel in character and not at all satisfactory. The first cross between a pure-bred European bull of any of the breeds that have been tried is in most instances a useful animal. From its native mother it inherits sufficient hardiness to enable it to maintain condition in winter, and from its foreign sire greater weight and a measure of early maturity.

White breeders, not contented with the success of the first cross but striving to introduce more European blood than the conditions of the country could support, have by putting pure or high grade bulls to first crosses, produced animals that cannot hold their flesh in winter and are a discredit to their blue blooded ancestors, as well as a loss to their owners. I suggested to cattle breeders in Rhodesia that standard bulls should be produced by mating bulls of the various European breeds with Africander cows, so that a Rhodesian Africander-Shorthorn, a Rhodesian Africander-Devon, a Rhodesian Africander-Lincoln, a Rhodesian Africander-Polled Angus, a Rhodesian Africander-Holstein, a Rhodesian Africander-Ayrshire, or similar blend of almost any other breed could be produced by those wishing to breed any one of these types of cattle, or to grade up their native cattle toward a common half-bred standard. I selected the Africander as the best of the South African cattle for the purpose—the largest in size, of a deep red or black colour, capable of withstanding the climate, and with a reputation as a trek ox unequalled in South Africa. The leading breeders were so favourably impressed with the suggestion that at a meeting called by Colonel Raleigh Grey, it was agreed to form a Rhodesian Herd book and Breeders' Association, to preserve the purity of the Africander breed, and to produce standard bulls of a number of the varieties named.

HARDINESS OF NATIVE CATTLE.

The native cattle of Rhodesia are hardy and well able to withstand the adverse circumstances which periodically occur in a country where no systematic or widespread effort is made to provide for cattle during the trying winter and spring months when the grass on a considerable area is dry, hard, and unpalatable, and when, owing to unseasonable veld fires, little even of the withered herbage remains, and animals find it difficult to get food of any kind. By cutting off, in accordance with the law of the survival of the fittest, all weaklings, those annual trials of endurance have greatly contributed to the hardiness of the race, and have through a long period of years moulded them in a most perfect manner to the conditions of the country. Their lot has been made all the worse by the native system

of management, which not only shuts them up in kraals during the night, ostensibly for protection against lions and other predatory animals, but unnecessarily aggravates the evil by the practice of keeping them in the kraals till 11 o'clock in place of letting them go at daybreak to feed before the sun gets hot.

It is wonderful how pure native cattle remain in fairly good condition under those circumstances, even during the trying period before the rains come in October. But when they are allowed to run both day and night they gain the greatest benefit during the hours when, by the deposition of dew, the grass is softened and they can get down to the bottoms of the withered tufts and find green or succulent food, with the result that mature healthy cattle can lay on flesh at any period of the year and become, in stock breeders' language, "rolling fat."

Land that is fenced, so that cattle can run without kraaling, will carry double the stock and do them better than similar land unfenced; and when it is eaten down, pasture grows finer year by year, owing to sweet grasses taking the place of coarse ones.

Endurance in the yoke is intimately associated with hardiness of constitution and rustling power. These qualities are, however, incompatible with a high degree of early maturity. Instead of acquiring them, all breeds of European cattle and their high grade crosses get extremely emaciated at the most trying season of the year, the early maturity shorthorn being probably the one which as a pure bred animal shows greatest weakness in this respect. With the loss of power to retain flesh, the benefits to be derived from a tendency to early maturity naturally vanish. While native cows will each produce at least a calf every year, and some even six calves in five years, often only 80 per cent. of imported European animals yield calves, and these require much care in rearing. The advantage of greater weight in a European as compared with a native animal is more than lost by the reduction in numbers, and to this must also be added the greater death rate due to their periodic thin condition.

THE RESULT OF CROSSING.

A close study of the results of crossing clearly showed that the most useful animal to serve the country's wants is

a half-bred blend of European and native blood. The first cross from good animals on both sides combines the best qualities of both—the hardiness and endurance of the native dam, with a considerable measure of the early maturity and greater weight of the European sire. By breeding from first crosses carefully selected, especially on the male side, and continuing to do so without introducing more pure blood from either source, a breed of cattle that would breed true to type, admirably adapted to the conditions of the country under a *régime* of progress and improvement in the pasture, could be built up in a few years. This desired object would be reached all the more quickly if, on the appearance of some bull of special excellence, his progeny were once inbred, or, more correctly, line-bred, but not to closer affinities than cousins.

THE AFRICANDER.

The best native breed from which to draw females to produce what might be called the “standard” improved type of almost any of the European breeds is the Africander. This breed nicks particularly well in crossing with European cattle, probably because, as is believed, it was formed by mating North Devon bulls with cows descended from the aboriginal cattle found in the country four hundred years earlier, when it was occupied by the Portuguese, and crossed with cattle introduced by them from the Spanish peninsula. Owing to its great importance as a foundation breed in the formation of standard breeds from which to produce bulls to improve the mongrel cattle of the country, and to establish improved herds for general purposes, the Africander should also be preserved as a pure breed, and should occupy a prominent place in the herd book of Rhodesian cattle, which it is proposed to form. Admission should be given to animals of Africander type which are good enough to satisfy competent judges sent officially to inspect those proposed to be entered. As some very excellent specimens for both size and quality remain of the Matabele cows descended from Lobengula’s best stock, they should also be admitted for the purpose of breeding half-bred standard bulls. Although possessed of considerable merits as foundation stock for general breeding purposes on the farm, none of the other breeds of cattle are good enough for those purposes.

MASHONA CATTLE AND HOW TO BREED THEM.

The Mashona cattle, which are the most numerous of the native breeds, are excellent farm cattle, short-legged, thick-set, and good in the yoke, but they are mostly in the possession of natives who are not willing to sell any great number of them. The type of the modern Matabele breed is much like that of Mashonaland, but rather longer in the legs. Little can be done to improve the cattle of natives further than to induce them to castrate the inferior specimens before they grow large enough to get calves. Although native-bred cattle are usually very much inbred, they do not seem to suffer the evil consequences usually looked for in the train of the practice among British cattle. In time it might be possible to bring about exchanges of bulls among different kraals, but any immediate action in this direction might lead to the price being raised of the cattle the natives are prepared to sell, and increase the difficulty of settling the country. The proper course for a Rhodesian farmer to follow in breeding with cows of the Mashona breed or their kindred is to mate them first with a pure North Devon bull, so as to give the progeny a tendency to early maturity, and then in turn mate the cross with an Afrikaner bull to increase the size and bring the herd into closer connection with the standard half-bred bull which would subsequently be always used.

THE ANGONI AND GERMAN EAST AFRICAN CATTLE AND THEIR CROSSES.

This course is equally applicable to breeding up a herd from the little Angoni cow or still smaller, humped, nearly-related animal from German East Africa. This breed, which belongs to the Zebu or Indian race of cattle, with black skins under many shades of colour of hair ranging from white to black, is probably the hardiest of all the cattle in Rhodesia. They have unsurpassed power of resisting the influence of a tropical sun, and for their size the bullocks are unequalled in the yoke. Casualties are rare among breeding cows, even when these are mated to shorthorns and bulls of other large breeds; but, although very excellent offspring do sometimes occur from such a cross, the characteristics of two such parents are too



Photo by]

Africander Heifers.

[Eric A. Nobbs.



Photo by]

East Coast Cattle.

[Eric A. Nobbs.

divergent to give uniformly good results. The progeny of the humped cow mated with the North Devon bull loses the hump in the first generation, and the danger arising from mating two animals of very different size is avoided. If mated with the Africander bull the humped cow transfers more or less of a hump to her calf. The place for the Africander bull, as in the case of the Mashona cross, is as sire of the second cross. Modified humps may appear now and then in a few cases for some generations, but not so as to do any material injury to the value of the animals; the ultimate result of the composite cross may be relied upon as satisfactory under the influence of standard half-bred bulls, especially of the Devon-Africander breed.

NORTH-WESTERN RHODESIA CATTLE.

The little Barotse breed, from the west of North-Western Rhodesia, should be crossed in a similar fashion to the humped and the Mashonaland cattle. The Africander bull would not only increase the strength of bone and size of the progeny by the first crosses, but it would eliminate the tendency to tender feet which is characteristic of Barotse cattle. One of the chief drawbacks to fine cattle of European origin is the softness and tenderness of the feet. On hard and stony ground they become lame and cannot travel freely.

Native cattle have broader and more durable teeth than imported stock, and they continue to live two years longer than half-bred cattle, and even thrive after losing their incisor teeth, when a British animal would starve to death.

BEST COLOURS OF CATTLE IN HOT COUNTRIES.

The best colour for Rhodesian cattle is black or dark red, and the vast majority of native cattle belong to one or other of these colours. A good many are broken in colour, but few combine the unquestionable weakness of having white or pale skin under the white or light coloured hair. Such a combination, common among European cattle, is a weakness when the animal is exposed to a tropical sun, which blisters the skin and impairs the health. Dark red is now the favoured colour among Africanders, but at one time there were as many cattle of the breed

black as there were red, and the finest of Lobengula's herds were black. This was the royal breed, and it supplied the carcasses which were consumed on the occasion of feasts. The red of the North Devon and of the Lincoln Red Shorthorn is a characteristic strongly in their favour in mating with the Africander, while the white faces, legs, and hoofs of the Hereford militate against him.

The Friesland-Africander standard bull will compete with the Lincoln-Africander as a general purpose animal, especially if the uniform black is striven for. To this group the black Welsh-Africander also belongs. The Ayrshire-Africander, if bred from dark coloured Ayrshire bulls with a good milking pedigree, would probably be the most suitable milking breed for a country dairy. The bullocks would grow into excellent work oxen of good size, though as beef-producing cattle they would be slow to mature while young. Beef types can be got separately by use of Shorthorn, Polled-Angus, Devon, Hereford, or Sussex bulls, but bulls of practically any of the British breeds—as well as of the Swiss Zimenthaler famous for milk, and the white Roman Rampas breed noted for work—would cross well with Africander cows. Although it was at first proposed to restrict the Herd book of the Rhodesian Cattle Breeders' Association to entries of (1) Pure Africanders, (2) North Devon Africanders, (3) Polled Angus Africanders, and (4) Lincoln Red-Shorthorn Africanders, there appears on further consideration no reason why good half-bred animals, the progeny of animals bred true to type on both sides, should not be entered, each breed in its own separate section.

OVERSEA CATTLE.

Cattle from overseas are liable to contract red-water fever on being introduced into Rhodesia, which is a red-water fever country in the same sense that Texas is a red-water fever country. Animals born in the country and inoculated at an early stage of their existence contract the disease in a mild form and are mostly immune from the most serious consequences of it, especially if systematically dipped, so that too many ticks are not permitted to live on them. There is a danger in a red-water country of killing all the ticks on a farm by dipping, as cattle from a farm where this has occurred are liable to contract the dangerous form of red-water when removed to a part of

the country where the disease-bearing ticks are present. To reduce the risk and the percentage of death among cattle brought from Europe or America, they should be taken in when under a year old and regularly dipped every fourteen days to keep down the number of ticks, and consequently moderate the fever which all may be expected to take.

MARKETS FOR THE BEEF TO BE PRODUCED.

For a number of years all butchers' cattle for sale would find a satisfactory market in South Africa, especially if butchers' cattle are not encouraged to come in from the North, and by the time the supply began to overbalance the local demand there would be a sufficient number of new settlers in the country to combine to form a co-operative refrigerating association to ship the surplus meat to the London market. The pick of the North Devon crosses with the native cattle would be good enough for the purpose, though a little on the light side. In the course of time the progeny of the standard bulls would admirably meet the requirements of the British market for carcasses of light weight.

The Time and how to find it.

By the Revd. Father E. GOETZ, S. J., the Observatory,
Bulawayo.

There are several simple contrivances for keeping a sufficiently accurate time at a place where a reliable time-piece is not available.

The first is by what is called a "Gnomon." A Gnomon in its simplest form, consists of a thin straight rod planted plumb on a level surface. The shadow thrown by the rod will fall exactly at the same place every day when the sun crosses the Meridian of the place, *i.e.*, the north-south line. It is then true noon. If therefore we have by some means determined the position of the shadow at true noon, we have a means of determining the time every day on which the sun is shining.

The position of the shadow which corresponds to true noon may be determined in two ways. Describe a circle on the horizontal surface from the foot of the rod as centre. Watch the moment before noon when the shadow of the rod leaves the circle, and mark the point on the circle. Let us call the point A. At the same distance from true noon after midday the shadow will reach the circle again. Mark this point, which we may call B, now join A B by a straight line, find the middle point M of A B and join M to the centre of the circle, *i.e.*, the foot of the rod. This line is the Meridian line. When the shadow lies over it, it is true noon at that place. This operation will be more accurate if done about the 22nd June or the 23rd December.

To get a reasonable degree of accuracy the rod should not be too short, for then a small error in the position of A and B will considerably throw out the meridian line. If the rod be too long it will often be difficult to estimate exactly the point where the shadow touches the circle, owing to the indistinctness of the shadow. The rod ought to be as thin as possible, but this is not consistent with the rigidity required. It is therefore advisable, if the rod be of appreciable thickness, to take as points A and B, the points where the middle of the shadow leaves or reaches the circle and join the point M to the middle of the foot of the rod, or if it be easier, to take the outer edge of the

shadow both before and after noon, but the middle point M must in this case also be joined to the middle point of the foot of the rod. True noon shall be in both cases at the moment when the meridian line bisects the shadow of the rod.

To get the Standard South African Time from this observation two corrections have to be applied, one depending on the longitude of the place, and the other on the time of the year.

The correction for longitude comes from the fact that by a convention made a few years ago the official time in South Africa is the time of the 30th Meridian East. That means that all through South Africa clocks are regulated to mark noon exactly two hours ahead of Greenwich.

Accordingly at places east of the 30th degree of longitude, when the shadow reaches the meridian line the clocks do not yet mark 12 o'clock, and consequently the sun is ahead of the clocks, that is, a certain amount is to be subtracted from the time marked by the rod. This amount is 4 minutes for every degree of longitude and 4 seconds for every minute of longitude.

The reverse takes place for localities west of the 30th meridian, where 4 minutes and 4 seconds have to be added for every degree and minute of longitude respectively. For instance:—The longitude of Salisbury is 31 degrees 2 minutes, that is 1 degree 2 minutes east of the 30th meridian. When the sun passes over Salisbury, *i.e.*, when the shadow line coincides with the meridian line at that place, we know that it will take the sun 4 minutes and 8 seconds to reach the 30th meridian and therefore that the clocks regulated to Standard time ought to mark 11 hours 55 minutes and 52 seconds. The longitude of Bulawayo is 28 degrees 35 min., that is 5 degrees 25 min. west of the 30th meridian, consequently when the sun reaches Bulawayo it is already 4 min. and 25 times 4 sec., or 5 min. and 40 sec., since the sun passed the 30th meridian and the clocks set to standard time ought to mark 12 hrs. 5 min. 40 sec. This correction is therefore a fixed quantity to be added or subtracted, and can easily be determined once for all at least within a minute, for the longitude of most places in Rhodesia can be ascertained within a quarter of a degree, which corresponds to a correction of one minute in time.

The second correction called the "Equation of Time," comes from the fact that the time is not got directly from the motion of the sun which is not uniform, but from the uniform motion of a fictitious sun called the "Mean Sun." The corrections to be applied are given in the following table. They are at some periods to be added to, at some others to be subtracted from the time as given by the shadow of the rod. Four times a year on April the 15th, June the 15th, September the 1st, and December the 24th, no correction is to be applied, a fact noted here since as we will see later. This may help us to determine the meridian line without much trouble.

TABLE I.

Equation of Time.

(1) Minutes to be added to the time marked by the Sun's shadow. (From Dec. 25th to April 16th and June 15th to September 1st.)

December.		March.	
Date.	m.		
25	0	4	12
27	1	8	11
29	2	12	10
31	3	16	9
		19	8
		22	7
		26	6
January.		29	5
2	4		
4	5		
6	6		
9	7		
12	8		
14	9		
17	10		
20	11		
24	12		
28	13		
February.		April.	
4	14	Date.	m.
11	14½	1	4
20	14	5	3
27	13	8	2
		12	1
		15	0
		16	0
		June.	
		14	0
		15	0
		19	1

June.		August.	
24	2	3	6
29	3	12	5
		17	4
		22	3
4	4	25	2
10	5	29	1
19	6		
26	$6\frac{1}{2}$	September.	
27	$6\frac{1}{3}$	I	0

(2) Minutes to be subtracted from the time marked by the Sun's shadow. From April 16th to June 15th, and September 1st to December 25th.)

April.		October.	
Date.	m.	Date.	m.
16	0	4	11
20	1	7	12
25	2	11	13
		15	14
		20	15
		27	16
May.		November.	
2	3	3	$16\frac{1}{3}$
15	$3\frac{5}{6}$	10	16
28	3	17	15
		21	14
		25	13
		28	12
		31	11
June.		December.	
4	1	4	10
14	0	6	9
		8	8
		10	$7\frac{1}{4}$
		13	6
		15	5
		17	4
		19	3
		21	2
		23	1
		24	$\frac{1}{2}$
		25	0
September.			
1	0		
4	1		
7	2		
10	3		
13	4		
16	5		
19	6		
22	7		
25	8		
27	9		
30	10		

Some examples will show sufficiently how the corrections have to be applied. What is the Standard time at Salisbury at true noon (that is when the meridian line bisects the shadow of the rod) on Dec. 5th and March 27th? The longitude of Salisbury is 31 degrees 2 minutes. As we have seen before the first correction for longitude shows that on account of the longitude the true time in Salisbury is 4 m. 8 sec. ahead of Standard time. On 5th Dec. the table of the "Equation of Time" gives between 10 and 9 minutes, let us say 9 m. 30 sec., to be subtracted from the time marked by the shadow, the total correction is therefore 13 m. 38 sec. to be subtracted from 12 o'clock, and the clocks ought to mark 11 hr. 46 m. 22 sec. to be correct. On March the 27th the Equation of Time is about 5 m. 40 sec. which have to be added. One correction, in this case 4 m. 8 sec., has to be subtracted, the other 5 m. 40 sec. has to be added. Take the difference of the two, 1 m. 32 sec., and add this to, or subtract it from 12 o'clock according as the larger of the two corrections has to be added to or subtracted from the true time.

Some may prefer the following way:—Make the correction for longitude once for all for the place where the rod is erected and to that add, or from it subtract, the Equation of Time, according to Table I. Thus for Bulawayo and Salisbury respectively we may say that at true noon, a well regulated clock ought to mark 12 hrs. 5 min. 40 sec. and 11 hrs. 55 min. 52 sec. respectively, more or less the Equation of Time. Hence in the above case, when the shadow is on the meridian line, a clock at Bulawayo ought to mark 12 hrs. 5 min. 40 sec. less 9 min. 30 sec. and 11 hrs. 55 min. 52 sec. less 9 min. 30 sec. at Salisbury on the 5th of December, and on the 27th of March 12 hrs. 5 min. 40 sec. plus 5 min. 40 sec. at Bulawayo, and 11 hrs. 55 min. 52 sec. plus 5 min. 40 sec. at Salisbury.

These considerations lead us to the second method of determining the meridian line, and this will generally be found both easier and more accurate than the first. It sounds simple enough to erect a rod in a vertical position, but in practice it may not be found to be such an easy thing to do accurately, and other methods may be welcome. From what has been said it is evident that the shadow

from any object that is truly vertical can be used to determine the correct time if we can find on a single occasion the true position of the shadow when the sun crosses the meridian which passes through the object. Thus the vertical edge of a window may be used with advantage if the midday sun reaches it, or the corner of a house, or a string hanging from a post and well stretched by a weight (the string must of course be hanging freely, not touching anything, nor must the weight touch the ground). Let us take for instance the vertical edge of a window. If we have a watch which is known to mark on some occasions accurate time or whose error is known, we may calculate beforehand the time which the watch ought to mark at the moment when the shadow thrown by the edge of the window on the windowsill, or even on the floor or wall inside the room, will be on the meridian, that passes through the edge of the window. An example will show clearly how to proceed. Let us suppose that on the 10th of July a person at Salisbury having a watch known to be 4 minutes late on the Post Office clock wishes to mark the meridian line on a window-sill facing north. We may reason thus: at true noon at Salisbury a watch ought to mark 11 hrs. 55 min. 52 sec. more or less the Equation of Time, in this case 5 min., which have to be added to the time marked by the sun's shadow. Hence the watch ought to mark if well regulated 12 hrs. 0 min. 52 sec., but the watch is 4 minutes slow, hence the sun would have passed the meridian 4 minutes before, and it was when the watch was marking 11 hrs. 56 min. 52 sec., that the position of the shadow of the window's edge on the sill or on the floor ought to have been noted.

The line thus determined is the meridian passing through the edge of the window, and every day at true noon the shadow will lie over that line. Hence on any day henceforth by noting the time a watch marks at that moment and by applying the two corrections we may get the error of the watch. If in the above example we leave out the correction for longitude and apply only the Equation of Time, we shall not of course get the true meridian, but we shall not need to apply this correction in future. Thus if, taking the same example, we apply only the Equation of Time which is of 5 minutes to be added and (supposing the watch to be correct we mark the place of the shadow at 12 hrs. 5 min. and draw a line along the

shadow, we shall have a line which is out of the meridian by exactly the amount represented by the correction of longitude and henceforth the only correction to be applied when the shadow reaches the line is the Equation of Time. This correction cannot be disposed of in a similar way since it changes from day to day. This operation can be performed without the trouble of any special computation four times in the course of a year, on April and June the 15th, September the 1st, and December the 24th, as on those days the Equation of Time is nil, or practically so.

As the sun is south of us for a part of the year in the greater part of Rhodesia a similar operation would have to be performed at a window on the southern side which receives the sun at midday at that time of the year, roughly speaking from the middle of November to the end of January.

SUNDIALS.

As for a part of the year we are liable to get for days and even weeks cloudy weather at midday, some people may want a means of ascertaining the correct time at any moment of the day when the sun happens to be shining. This can be done by a sundial. In its simplest form a sundial consists of a horizontal surface into which is planted a rod called "stile" that points to the pole. The shadow thrown by this rod on the level surface will come back to the same place every day at the same hour.

To get the stile to point to the pole two conditions are required and they are sufficient. The stile must make with the level plate an angle equal to the latitude of the place and it must be in the meridian. The latitude can always be known with sufficient accuracy as it will be enough to know it within half a degree. The meridian line on the horizontal plane can be determined as stated before by a gnomon. It will not be found easy as a rule, to insert into the level plate a stile making with it an angle equal to the latitude of the place and situated at the same time in the meridian. But the rod can with advantage be replaced by a plate of metal cut in the shape of a triangle, one angle of which is equal to the latitude of the place. The metal plate is best only just thick enough to be rigid. A triangle cut out of a piece of plank will do also but in that case the thickness of the plank will have to be taken into account. This induces no complication as will be

explained later. If this triangle be placed on the level plate so that one of the sides comprising the angle equal to the latitude be placed on the meridian line with this angle opening to the south the other side will point to the South Pole and will act as the stile required.

Care must be taken that this edge pointing to the pole be cut perfectly straight or the shadow thrown by it will not be a straight line, a fact which may be a cause of considerable error especially in the early forenoon or in the late afternoon. The triangle must be set quite plumb on the level plane over the meridian line, or else the upper edge will not truly point to the pole, as it would then be out of the meridian.

A triangle containing an angle equal to a given latitude 17 degrees and 21 degrees 30 min. may be constructed by the use of Table 2 given below, in the following way, with a fair degree of accuracy if proper care be taken.

Draw a line A B of 12 inches in length. At one end, say B, draw a line making with A B a right-angle; on this line cut off a portion B C equal to the number given below, the required latitude in the table. Join C A, the angle A will be the required angle.

The numbers given in the table are inches and 32nds of an inch.

TABLE 2.

Latitude	21° 30'	21°	20° 30'	20	19 30'	19°
Inches and 32nds. ...	4 -23	4 -19	4 -15	4 -12	4 - 8	4 -4
Latitude	18° 30'	18°	17° 30'	17°		
Inches and 32nds. ...	4 - 0	3 -29	3 -25	3 -21		

It is not necessary to make the stile quite so large; the length of 12 inches has been chosen for this table in view of a construction which is to be explained later. We may use 6 inches but then the numbers in the table have also to be halved. Thus if the line A B be 6 inches, the line B C, in case we want to form the angle of 20 degrees would be of 2 and 6-32 inches.

The stile being once in its position in the meridian by this construction we may proceed to mark the hour lines. This may again be done in two ways, either by the use of a timepiece which keeps fairly accurate time, or by measurement.

If this is to be done by means of a clock proceed as follows. Through the point where the stile enters the horizontal plane draw a line at right angles to the meridian line on either side of it; the western part of it is the six hour line of the forenoon, the eastern part the six hour line of the afternoon.

Next calculate as explained in the case of the Gnomon the sum of the corrections that have to be applied to the true time on that day, and this gives you the difference between the time the clock (supposed to be accurate) ought to mark and the different hours marked by the shadow of the stile on the horizontal plane. Thus if we refer to the examples given above we see that if in Salisbury we wish to mark the hour lines on a dial (supposed to be already in proper position with regard to the meridian) on the 5th of December we have only to watch the shadow when the watch marks 6 hrs. 46 min. 22 sec. The shadow line is then on the 7 hour line of the dial. This line being determined, we determine in a similar way the hour line of eight, nine, ten and eleven. The afternoon lines of one, two, etc., are symmetrical with the 11 and 10 hour line of the forenoon, about the meridian line. At true noon, in the present case when the watch marks 11 hrs. 46 min. 22 sec., the shadow ought to be on the meridian. If this method be resorted to on April or June 15th, September 1st, or December 24th, the correction of longitude only will have to be taken into account as the Equation of Time is zero on those days. The half hours and the quarters may be marked off in the same way. Remark that the shadow starts always from the point where the stile reaches the horizontal plane and that therefore all the hour lines ought to be drawn through this point. It is not advisable to mark the half hours and the quarters by a full line. A short line directed of course towards the common meeting point of the hour lines will be sufficient. We might in this case also draw the hours lines in a way which would enable us to dispense with the correction for longitude in future. For that, it would be sufficient to omit the correction for longitude when computing the time the watch ought to mark and take this as the time when the shadow would coincide with the hour line.

In the example given above, the corrections for Salisbury are 4 min. 8 sec. to be subtracted from the hour for longitude and 9 min. 30 sec. for the Equation of Time,

making in all 13 min. 38 sec. If we subtract 9 min. 30 sec. only and mark the line of the shadow at 6 hrs. 50 min. 30 sec., we shall have the correction for longitude incorporated on the dial once for all. If, however, the Convention about Standard Time were to be changed the dial would no longer be correct; it is best therefore not to do this but to mark the hour line at 13 min. 38 sec. before the hour, wait 4 min. 8 sec. and make a short mark at that point to indicate that the hour line according to Standard Time ought to pass there and read the hours when the shadow reaches that point.

If this construction be adopted the new noon line will not be exactly on the meridian line but differ from it by the correction for longitude, and the afternoon line will be symmetrical, not about the meridian line but about the noon line thus determined.

The hour lines may also be directly determined without the use of a watch by the following construction.

Measure exactly 12 inches on the meridian line towards the south, from the point where the stile enters the horizontal plane. At the point thus determined draw a line across the meridian line, at right angles to it; on this line mark off distances from the meridian line as found in the following table. The first number being inches, the second 32nds of an inch.

TABLE 3.

Distance of the hour line from the meridian line in inches and 32nds of an inch.

At Latitude	...	..	11 & 1	10 & 2	9 & 3	8 & 4	7 & 5
21° 30'	...	...	1—6	2—17	4—13	7—20	16—13
21°	...	...	1—5	2—15	4—10	7—14	16—1
20° 30'	...	...	1—4	2—14	4—7	7—9	15—22
20°	...	...	1—3	2—12	4—3	7—3	15—10
19° 30'	...	...	1—2	2—10	4—0	6—30	14—30
19°	...	...	1—1½	2—8	3—29	6—24	14—18
18° 30'	...	...	1—1	2—6	3—26	6—18	14—6
18°	...	...	1—0	2—4	3—23	6—13	13—26
17° 30'	...	...	0—31	2—2½	3—19	6—8	13—15
17°	...	...	0—30	2—1	3—16	6—2	13—3

The hour line of 6 (a.m. and p.m.) is a perpendicular to the meridian line through the point where the stile enters the horizontal plane. If the hours of 7 a.m. and

5 p.m. be produced through that same point we get the hour lines of 5 a.m. and 7 p.m. respectively; these will, however, never be of use in Rhodesia.

It may be found inconvenient to have to measure 16 or 15 ins. on either side of the meridian line. This can be obviated by drawing for instance a perpendicular to the meridian line at say 3 ins., from the point where the stile enters the horizontal plane, and reducing the figures in the columns of "7 and 5" hours in proportion, in this case taking the fourth, and measuring off these distances on the new line.

But for the hours of 11 and 10 this ought not to be done if fair accuracy is required, for in the case of the 11 hour line we see that an error of one 32nd induces an error of nearly two minutes in time, whilst on the line of the 7 hour an error of $\frac{1}{8}$ does not make more than an error of about a minute in time, if measured off on the line which passes one foot from the end of the stile.

A sundial may of course be constructed at leisure indoors according to this method, and when finished put in position outside on a level place, on which a meridian line has been determined. If the dial be so placed that the stile is on the meridian line, the sundial will work accurately.

The sundial itself may give the meridian line with the aid of a reliable watch as explained before. All that is wanted is to calculate the time the watch ought to mark when the sun is on the meridian. Be on the look out at the moment and place the dial so that the shadow of the stile falls exactly on the hour line of 12. The dial will be in proper position, for the stile will be in the meridian.

If the dial has an appreciable thickness, for example if made out of a piece of wood, the middle of the plank must fall on the meridian line, and in that case the thickness has to be taken into account when marking off the hour lines. If for example, the stile be made of an inch board, the shadow at midday will cover $\frac{1}{2}$ inch on either side of the meridian line, and the hour lines will have to be marked off according to the distances in Table 3, not from the meridian line but from half an inch distance on either side, and the points thus obtained joined to the point where the corresponding edge of the stile reaches the horizontal plane, half an inch also from the meridian line.

The following easy way of constructing a dial may be of use. Take a piece of well seasoned plank (a small drawing board or even a pastry board would do) draw a line in the middle parallel to the sides, to represent the meridian line. Near one extremity of this line bore a small hole through which pass a thread (a length of thin wire would do better) and fix it firmly. At 12 inches from this hole erect an upright at right angles to the board and through it at a distance from the meridian line taken from Table 2, according to the latitude of the place, bore a hole, through which pass the thread, and by some means or other, such as a small weight, keep it well stretched. This hole must be right over the meridian line. The thread will make a perfect stile and if the hour lines be marked on the board by one of the methods given above, it will be found that it answers very well. The upright can be put at six inches instead of twelve and the numbers taken from Tables 2 or 3 halved, if a smaller board only be available. As a sundial of this description would not last long if permanently left outside, one has only to mark exactly its position when accurately set up on a pier or wall, and put it in the same place whenever one wants to get the proper time.

African Coast Fever: Marandella.

By J. M. SINCLAIR, C.V.S.

14th May, 1909.

During the month of April a totally unexpected outbreak of African Coast Fever occurred on the farm "Springvale" Marandella District.

For some time previously cases of sickness had occurred and had been investigated, but nothing of a specific nature was suspected until the 14th inst. (April) when Mr. Speer, G.V.S., visited the place. His post mortem, and the microscopic examination of blood-smears by Mr. Jarvis, G.V.S., Umtali, left no doubt that the disease was Coast Fever.

Since then the course of the disease has been very virulent, and at the date of writing over a hundred animals have succumbed. The only other centre so far found to be infected is Marandella station, and there the infection is traceable to animals removed from Springvale, prior to the discovery of the nature of the disease.

Various lots of cattle have been under observation in Marandella and adjoining districts, particularly those which had been to Marandella station and had left that part of the district immediately before the outbreak, and now after three weeks no appearance of the disease has been manifested. As the average period of incubation is about 11 to 12 days there is now every reason to believe that all these animals are no longer a source of danger.

The source of infection is still unknown. The following history of the cattle on Springvale will show how difficult the problem is:—

The only strange animal introduced to the farm was a Friesland bull imported from the Cape Colony. This animal arrived in the month of October, 1908, and died in January of the present year from ordinary red-water. The first animals, after the bull, to die were the calves, and the cause of death was attributed to red-water. After the calves some of the older animals which had not been off the farm for years became affected. Some of the trek oxen then contracted the disease. These had

been, at frequent intervals, to Marandella station, but had not been outspanned from the time of their leaving the farm until their return.

The fact that the oxen did not show any signs of illness until comparatively late in the day shows that they did not bring infection to the farm, and the fact that the disease has not, after a lapse of three weeks, appeared in any farms in the district from which cattle have been to Marandella supports this view. How then was infection conveyed to the farm? Time may bring a solution of this difficulty, but at present there is no clue.

Shortly after the discovery of the disease at Springvale two calves and a cow died at Marandella station. Post mortem and microscopic examination of blood smears showed in each case, Coast Fever. So far these are the only two centres on which Coast Fever has been diagnosed. On the farm Gatzi there are six colonial bred Friesland heifers and one bull. These animals have been regarded with suspicion and have been under daily observation for over three weeks. They are the balance of a lot imported some months ago, and which on arrival in Salisbury had to be detained for upwards of two months before temperatures were sufficiently normal for the application of the Tuberculin Test. Several, however, died in Salisbury and the cause of death was assigned to redwater. At present the heifers in the farm are in poor condition and very anaemic looking. Their temperature records during the past three weeks show repeated exacerbations of fever. On one of the adjoining farms Mr. Stirling, Government Veterinary Surgeon, found two calves shewing very high temperatures, he immediately started a temperature camp, and within a fortnight twenty six calves and two large animals were removed from the herd as shewing marked fever. On the 4th of May, that is ten days after the first cases were detected, all temperatures except one were normal, and the animals were with one or two exceptions looking anything but ill. Similar cases have occurred in other two herds in the district. Microscopic examination of blood smears has failed to detect any evidence of coast fever except in the case of one of the Gatzi heifers.

What the actual cause of these passing febrile reactions is it is impossible to say without an exhaustive series of experiments and observations, but I am of opinion that the

calves are really "salting" to redwater, complicated with the disease caused by *Piroplasma Mutans*.

Tick infection has been very heavy during the past season in this locality, and it is probable that such is accountable for the more than usually pronounced symptoms in calves.

In the case of large cattle which are ordinarily immune, it is well known that heavy tick infestation will break down the immunity and cause an attack of redwater. The number of cases of redwater observed in all classes of cattle during the past season was greater than for many years previously.

A Simple Mosquito Trap.

Mr. Lefroy, of the Indian Entomological Department, has devised a simple and cheap Mosquito trap, which is said to have been found highly effective. A small box, 12 by 9 inches, fitted with a hinged lid, is provided with a small opening over which moves a sliding cover. The box is lined with dark green baize and has a tin floor. The trap is placed in a shady corner of the room, and the mosquitoes on entering the house in the morning seclude themselves in the box to escape the sunlight. When duly settled the lid is shut and about a teaspoonful of benzine injected into the box. We learn that in the course of a month, no less than 2,300 mosquitoes succumbed to the benzine.—"Indian Planters Gazette."

NOTE.—This should be a most valuable trap to use in houses, also in stables here if the Rhodesian Mosquitoes take as kindly to it as their Indian brothers!—[Actg. Ed.]

Sparrow Poisoning.

Take 1 teaspoonful of strychine crystals and 2 pints of wheat. Put them into a vessel with a quart of water and boil until the grain has absorbed the whole of the liquid.

Remove, and when quite dry, strew the grain on feeding grounds frequented by the birds. The best places are those from which grain crops have recently been harvested, or on which it has recently been sown, as the birds are less suspicious when such places are selected. (G. M. McKeown, in the "Agricultural Gazette" of New South Wales.)

Flax=Linum Usitatissimum.

By C. E. F. ALLEN, Department of Agriculture.

Three thousand years ago the Phœnicians are said to have devoted much attention to the cultivation of this plant. Egyptian mummies were wrapped in linen which in many cases has been found in excellent state of preservation, after the many centuries it has encased the remains of some ancient noble of those bygone days. It is in fact one of the oldest fibres used for clothing purposes.

These notes deal with the plant as a seed producer, as being of more immediate value to this country than the plant grown for fibre, a subject which it may be desirable to take up at some later date.

The seed is imported from Europe and landed at the Cape at from 20s. to 30s. per cwt. according to the season. The weight per bushel of good linseed varies from 52 to 55 lbs. Good flax-seed should give a purity test of 98 per cent. and a germination test of 85 per cent. Riga flax grown one year in Holland is usually regarded as the best seed procurable.

The soil for the crop should be a fresh, deep, well-tilled, and not too heavy loam,—but any soil that will produce an average crop of grain will be suitable. It has been found in flax growing countries that a succession of crops is impossible with this plant. The results are a poor yield, and often disease flax-wilt is brought on by these methods, in which case no crop at all is obtained. Flax is generally recommended as a crop that does best on newly broken land. The best crops are obtained by fallowing the land, by early ploughing; then at the sowing season giving a deep cross ploughing and harrowing, and finally rolling. This being so the value of the crop is somewhat enhanced under our conditions,—some of the newly broken lands might be sown with it the first year, and so instead of a poor crop of mealies, a good crop of Linseed would result.

The quantity to sow per acre is about 25 lbs. The seed is usually drilled in rows about 8 inches apart, but if the land is very free from weeds it may be sown broadcast. Generally the former method is preferable, as in this case weeding is rendered easy.

The time for sowing appears to be the same as for mealies, and all depends on the season. The crop takes from 90. to 100 days to mature. Careful and regular observation is required towards the ripening time of the seed. If the flax gets too ripe it shells badly, and this may be the cause of serious loss. To determine the exact season at which to harvest the seed crop, the surest method is to cut one of the seed capsules transversely, and if the seed is set and out of the soft milky stage the crop is fit for harvest. Cutting with a reaper and binder is the easiest method of harvesting. Flax grown for both seed and fibre cannot be expected to yield more than a mediocre crop. The yield per acre of seed in America is from 12 to 14 bushels. The crop may be stacked or stored in sheds in the same manner as wheat or oats are stored and threshed out at leisure.

The chief use is the oil extracted,—linseed oil, the demand for which greatly exceeds the supply. The next benefit derived is the oil cake, the residue after the oil is extracted. This is a most valuable cattle food.

A half-acre patch at the Experimental Nursery at Salisbury on red loam, has grown well, and been free from any kind of pest. The seed has not yet been reaped, and when it is, the yield per acre will be reported on in this "Journal." It was sown at the rate of 16 lbs. to the acre, and is somewhat thin.

Taking the yield of seed per acre at 12 bushels, each bushel weighing 50 lbs., and supposing the seed is sold at 4d. per pound, the return per acre is £10.

The department will be very grateful to farmers who have grown linseed this year, for any particulars they can send regarding the amount of success they have met with, the yield of seed per acre, etc., for publication in the next issue of this "Journal."

Until sufficiently large quantities are grown to justify the erection of an oil extracting press there must necessarily be a limited demand for the seed. Yet for those who have so far advanced in butter making, that they feed their calves on separated milk, linseed is a prime necessity, while as a fattening diet for any animals, given in moderation, it is of great value.

At present the small quantities available ought to find a ready market for seed purposes, while the day may not be far off when we have our oil and cake mills and our flax industry as well.



Photo by]

Flax-Linum Usitatissimum, grown at Experimental Nursery, Salisbury.

[C. E. F. Allen.

The Winter Feeding of Stock.

By A. J. MACLAURIN, Salisbury.

The question of winter feed for cattle in this country is one that will receive much attention each year. As the breeder is now using a better class of bull to his native stock, he will learn that the finer the breeding the more attention to feeding is necessary. Although in Rhodesia we have a long dry winter, we are well off, in that it is a comparatively easy matter to grow almost all necessary foods. We can divide the feed under the headings of Pasturage, Grain Crops, Root and Pumpkins, etc. In grain crops we have a most valuable asset in the mealie. There is a small grinding machine on the market costing about £8, worked by horse power which will grind the corn and cob at one operation. The addition of the cob to the corn makes a more wholesome food. The corn by itself is too concentrated and difficult to digest. From the mealie we also get one of the best of foods in the shape of the mealie silage, which is so easy to cure. All that is necessary is to dig a hole in the ground, not more than 15 feet in diameter, and with the greatest depth possible. When the mealie has reached the glazed stage cut the stalk and cob into as many pieces as possible, and be careful not to fill in more than five feet in a single day. Keep the edges well tramped down and on reaching the top of the pit wait till the heat has come up through the centre. On finding it about as hot as your hand can bear, cover with about 18 inches of soil and leave, for about two months. On opening the pit the wisdom of having waited until the mealies reached the glazed state will be apparent in the sweet condition of the ensilage. In flax we have a crop which for many years was considered unsuitable for this country, but in the last two or three years it has proved to be a regular cropper. It has the great advantage of being free from rust, and as is well known linseed is one of the finest of concentrated foods. Linseed when boiled to a jelly, and added to the calves ration of separated milk, is about the best known and most suitable substitute for the original butter-fat. The linseed jelly should be added in the ratio of one tablespoonful to two bottles of milk. On many farms where forage cannot be grown Manna hay

is becoming better appreciated. To obtain the best results it is advisable to cut the Manna before the seed has fully developed, when it will give a sweet and nutritious fodder.

On Mr. Browning's plot to the north of Salisbury there is growing a wonderful crop of the small variety of sugar cane. The variety does not seem to be affected by frost, and without a doubt the yield per acre of green fodder is greater than that of any crop yet tried in Rhodesia. Sugar cane is easily propagated by joint cuttings. The only preliminary matter to arrange is a plentiful supply of manure to ensure successful cultivation. Many farmers after having seen this excellent crop of Mr. Browning's have resolved to follow his example by planting this cane. Mr. Browning has demonstrated its useful qualities not only for cattle but also for horses and pigs.

A few words on veld hay may be of use to the new settler. Grass unless cut when young and succulent will yield hay of only poor quality. On this account cutting operations should be commenced as soon as the rains have ceased. Care should be taken that the hay does not become bleached by lying too long in the sun before raking into cocks. If hay is to be baled the best method is to proceed, as in building a permanent stack, salting each layer at the rate of one bag to each ten tons. The hay should not be baled until such a time as the salt has thoroughly permeated the whole stack.

With regard to pasturage it is found that the wild veld grass, which during the wet months of the year is plentiful and hard to beat, is by itself in winter incapable of supporting in good condition well bred stock. The introduction of the great Australian dairy grass, *Paspalum dilatatum* enables the farmer, at a small outlay, to provide himself with permanent pasturage which continues to grow well into the dry season and remains green throughout the year. This grass takes kindly to Rhodesian soil, is easy of propagation, and establishes itself readily. The individual plants extend on all sides and crowd out all other vegetation. The usual methods of propagation are by sowing broadcast, or sowing in seedbeds and transplanting. The latter is in the long run the more satisfactory. The seed bed if sown in midsummer will produce in nine months time young plants fit for planting out in rows three feet apart each way.

It is worth recording that a well known dairyman in Natal values his 600 acres of paspalum more than he would an entire 3,000 acre farm of ordinary veld. *Phalaris commutata* is another drought resisting grass which if it grows as well in this country as in Italy should surpass *Paspalum* as an asset to a dairy farm.

The dairyman's category of winter feeds is not complete without the addition of Pumpkins, watermelons and carrots, etc., which supply the necessary lucsciousness and balance the otherwise somewhat dry rations.

Southern Rhodesia Fencing Ordinance, 1904.

(Compiled.)

The procedure necessary to obtain the enactment of the fencing ordinance of 1904 briefly stated is as follows. The owners of landed property in any district desirous of having the ordinance brought into operation should first frame a petition in the form set forth below.

PETITION IN TERMS OF SECTION 4 OF THE FENCING ORDINANCE, 1904.

District

Date

To the Director of Agriculture, Salisbury.

Sir,—We, the undersigned, being residents of Southern Rhodesia and the owners of the landed property situated in the District of, Province of as described below, do hereby beg and request that His Honour the Administrator may be pleased, in terms of Section 4 of the Fencing Ordinance of 1904, to put into force and apply the provisions of Part I of the said Ordinance to the undermentioned area.

Description of Area:—

That District, or that portion of the District of (as the case may be) within the following boundaries. From the beacon of farm along the and boundaries of this farm, thence along the boundaries of farms, etc., etc., etc.

Signature.	Residence.	Name or Description of Landed Property owned.

This petition should be signed by at least two thirds of the owners resident in Southern Rhodesia (not necessarily resident on the land they own).

A notification is to be issued in the "Government Gazette," and one or more newspapers (if any) published and circularising within the District at least once a week for three consecutive weeks, on the lines of the following form. If there is no newspaper published in the District the Notice should also appear in the paper published in the nearest District.

NOTICE.

FENCING ORDINANCE, 1904.

Notice is hereby given that it is the intention of owners of landed property situated in the District of as described below, to petition His Honour the Administrator to bring into force and apply the provisions of Part

I of the Fencing Ordinance of 1904, to the undermentioned area:—

Description of Area:—

That District, or that portion of the District of (as the case may be) within the following boundaries. From the beacon of the farm along the boundaries of this farm, thence along the boundaries of the farms etc., etc., etc.

Dated at Signed this day of 1909, for self and Co-petitioners.

As soon as these formalities have been complied with, the petition, accompanied by a copy of the notice and a sketch map of the district or area referred to, should be forwarded under a covering letter to the Director of Agriculture, Salisbury, requesting him to submit to and recommend the same for the consideration of His Honour the Administrator.

The covering letter should state the dates of "Gazette" and newspapers in which the notice appeared, and it should be signed by an owner or agent representing the petitioners to whom all subsequent correspondence on the subject will be addressed by the Director of Agriculture.

When the proposal has received the sanction of His Honour the Administrator, it then becomes competent for any farmer within the area to require his neighbours to share the cost of fences erected on mutual boundaries. In the case of disagreement as to ways and means, the matter is to be settled by arbitration. In certain cases payments may be made by instalments.

Owners of land adjoining an area on which the fencing Ordinance is duly proclaimed, must contribute towards the cost of fences on that boundary. Special provision exists for the cases of absent owners, tenants, and of tenants with a right to purchase. Adjacent properties are responsible jointly for necessary repairs to their common fences.

The Ordinance does not affect the case of existing fences.

Copies of the Fencing Ordinance No. 18 of 1904 may be obtained from the Controller of Printing and Stationery, Salisbury.

Ticks and their Destruction.

(From a Report by C. R. EDMONDS, G.V.S., Bulawayo.)

The question of the destruction of ticks owing to their increase in numbers, and the losses occasioned by them is becoming more acute yearly.

Given a fenced farm and other conveniences, I think it would be possible for a farmer to entirely rid his farm of the pest, but whether it would be advisable to do so, is a disputed point, and one which I do not propose to deal with in this article farther than to point out some of the reasons. It is considered by some that by so doing a farmer would render his stock more susceptible to the various tick conveyed diseases common to the country. While the animals were on the tick free farm they would be all right, but as soon as they were taken off the farm to tick infested country, it is argued they would develop the tick disease with heavy loss of life.

I do not think there is any need for a farmer to worry over this point, because, although it might be possible to get a farm absolutely tick free, it is easier said than done. The chances are that he would find, that after he had done quite a lot of destruction there would still be a sufficient number of ticks left to inoculate his stock with the local disease.

At the same time I think all will agree that the matter of tick destruction is worthy of consideration, and although we have not reached a stage where farming is impossible on account of the ticks and possibly never may do so, although no artificial means were taken to destroy them, yet the loss of animals, the worry to the animals and extra work required on account of this pest makes the reduction of ticks imperative.

To take some of the diseases and losses due to ticks, mention may be made of the following:—

Redwater or Texas Fever has been very virulent during the past season, to quote the old adage, "Bad tick year, bad redwater year" has been found by experience to be true, and apparently the virulence of the disease is due to a great extent to the number of infected ticks feeding on a susceptible animal at the same time. For instance, it is fairly safe to import susceptible cattle in the winter months when ticks are few, the animals then appear to get a mild infection often unnoticeable, and are acclimatised and immune

by the time the flush of ticks arrive in the summer. Locally bred cattle too, in bad tick years, have their immunity broken down and deaths from redwater occur. Redwater is more severe in some parts than others, particularly on the commonages and main roads where the ticks are more plentiful.

It is with young stock that ticks cause the greatest loss and annoyance, the tuft of the tail in calves is a favourable place for ticks, and it is quite a common thing to see calves with the tuft of their tail lost through their bites. Sometimes one or more of the teats are lost in heifers. Between the fore and hind legs and in the heels are other favourite places, in any of which open sores are caused that sometimes end fatally, and if they do not, they cause so much worry to the calves that they cannot thrive, and grow as they should do. Goats too suffer a lot from the ticks, and the latter cause the goat and sheep herd boys quite a lot of exercise catching the lame animals, and either picking the ticks off or stabbing them with a thorn. The heels, between the claws, and between the forelegs being the favourite location in these animals.

It is a noticeable fact that with all stock, young or mature, that the poorer the condition of the animal, the greater the number of ticks that will be found on it. Why is this? Is it because the ticks choose a sickly animal, or because they have a better chance of becoming attached to it while in low condition; or is it that the presence of a large number of ticks by blood sucking, and consequent irritation bring the animal to a low condition.

The preceding do not of course include all the losses or diseases conveyed by ticks. Biliary Fever in horses, mules, donkeys and dogs is another fruitful cause, as in African Coast Fever. Think of the advantage a farmer who had his farm more or less free from ticks would have if this disease or a similar tick conveyed disease was to rage in the country once again. We know that a great proportion of the diseases zootic in South Africa are conveyed by ticks, and every year knowledge is being gained of other diseases being conveyed by ticks or similar blood-sucking insects or parasites.

The methods that have been adopted to destroy ticks on cattle are two, viz.:—Dipping and spraying. I do not wish to enter into the relative methods of either practice as both in my opinion have drawbacks (which I will point out) and do not approach an economic or ideal way of

handling cattle for tick destruction; at the same time until something better is evolved it is better to destroy ticks by these means than not at all.

By dipping, the animal is completely immersed for a few seconds in the dipping fluid. The best and only permanently serviceable tank so far as my experience goes is the one that is excavated in the ground, and built up with either concrete, masonry, or brick with a cement plastering, and a cement dripping yard for the animals to stand and drip in, to allow the excess of fluid to run back into the tank. The drawbacks to this method in my opinion are:—

(1) Cost of Tank. Built as cheaply as possible, providing it is well and substantially built, it will cost a lot of money.

(2) Cost of material to fill and work same. As a fair estimate it takes 3,000 gallons for the tank. Each beast will take about a gallon of fluid away in its coat, so you have to have a supply of dip ready to keep filling the tank up. The animals defecate and urinate into the tank. It is not used every day and varying lengths of time are allowed to elapse between the dippings. When the tank has been long in use it is often found that the fluid has become so polluted that the dip has to be thrown away and the tank cleaned out. 3,000 gallons of dip whatever the material used, costs too much money to be thrown away.

(3) The rough usage that the cattle receive to force them into the tank: the wilder the animals are, the better they "follow my leader" through the tank, but the majority of Rhodesian cattle are tame, and used to being handled, and with them it is usually a case of brute strength to drag, or push them into the tank. As it is necessary for the cattle to go in with a plunge to be completely immersed it is not safe to dip cows heavy in calf.

Other minor objections exist with this class of dipping tank, but the foregoing are the chief.

Spraying has been done with either a Success or a Douglas Spray Pump, other similar pumps are in use,—those are the two however that I have had experience with, and are both very good and useful pumps.

The objections to this method of tick destruction are:—

(1) Waste of dipping fluid. During the operation a certain amount of fluid passes over, under, and at the sides of the animals body, and is lost.

(2) The time required, and the number of hands it takes to thoroughly spray a herd of cattle.

(3) The cost of spray pumps owing to the different parts getting out of order.

Such are the two methods which have been employed, and which I think, could be improved upon.

The Seabury Cattle Spraying Machine is an American invention for dealing with cattle infected with scab and lice in America. The cost of this machine places it beyond the means of the average farmer, but I think the principle upon which it is worked could be utilised with advantage in the destruction of ticks. One of the machines has been obtained by Messrs. Cooper and Nephews, and is at work on their farm Gonubie Park, near East London. A description of the machine at work was given in the "Agricultural Journal" for December, 1908. This well known firm is making experiments with it and have promised a further report, and I think something will be done that will be of benefit to the farming community generally.

The principle of the machine is that cattle pass through a tunnel, and whilst they are within this tunnel are thoroughly drenched by spraying. Iron pipes pass round the inside of the tunnel from which the spraying fluid is forced into smaller pipes terminating in nozzles, which emit the fluid in a spray, the force used being a centrifugal pump supplied from a tank at hand.

I think this method will have many advantages over the two methods which have been so far employed in Rhodesia, or possibly a combination of all three may prove the solution of the problem.

AGENTS USED FOR DESTROYING TICKS.

So far the agents used for this purpose have been two, arsenic and paraffin.

(1) Arsenic.—This drug has been used either in its simple form as the Arsenite of Soda or Proprietary Dips of which it is the active ingredient, or else as white Arsenic boiled up with Soda, Stockholm tar, etc., what form does not appear to make much difference. The Arsenate of Soda is the cheaper form. The cost of dipping or spraying by Arsenite is however rather high. By economy in saving the fluid, and using it over again, the cost would be reduced considerably.

There is one very great objection to the use of Arsenic as a tickicide. I refer to the poisonous properties of the drug.

There is little doubt that Arsenic can be absorbed through the skin during the process of dipping or spraying, and death may result from such absorption. This power of absorption does not always appear to be present, but for some unknown reasons it appears from practice that this occasionally takes place and may result in the death of the animal.

Paraffin is a good tickicide used in the proportion of 25 per cent. to 75 per cent. water, but the cost of the material prohibits its use on an extensive scale, and another difficulty is experienced in getting the correct percentage, it will not mix with water and consequently can only be used as a spray through a spray pump that has a regulator affixed to allow the correct amount of paraffin through. In practice this is found to often get out of order, and if you put on too little paraffin the ticks are not killed, if too much you find your cattle blistered in all the tender parts between the thighs, etc., very stiff and sore and showing a difficulty and disinclination to walk or feed.

From the foregoing remarks readers will conclude that I have not a great opinion of the agents that have been so far tried for tick destruction, neither have I, but suppose we must endeavour to rub along with them until something better is discovered.

The discovery of a new material is far from being an easy matter. A suitable material must in the first place be cheap, and secondly it must kill ticks without injuring the stock. As the tick with its hard shell-like covering is a much lower organism than the host a good many materials if used would kill the host quicker and easier than they would the tick. I had the idea that perhaps tobacco juice would answer the purpose, it could be grown and prepared on the farm and so obtained cheaply, but on making inquiries I am informed that it has been tried unsuccessfully in Cape Colony. Another idea is, if ticks ever suffer disease (they never seem to do so) of a fungoid nature that they could be sprayed with a cultivation of such fungus similar to that used for locusts. If a new material is found I expect it will be after a series of investigations and experiments such as can be undertaken by the South African Governments, but too expensive to be undertaken by an individual.

Eastern Farmers' Co-operative Society.

In our April number was reported the formation of the Farmers' Co-operative Society at Salisbury. We now announce another society newly formed with Umtali as its head-quarters.

Mr. E. M. Jarvis, G.V.S., informs us that the society has been formed with the object of affording protection to the farmers from the competition of the traders, more especially the Greeks and Indians, and also against the competition with Portuguese grown grain. There is no idea of forming a corner in the market on the part of the farmers. As Mr. Jarvis states, supposing this intention existed, there is little chance of its being developed with the price at which Portuguese mealies can be landed at the respective railway stations.

There can be no doubt that these societies are of much value to any agricultural country, more especially is this the case with a young country like Rhodesia, and it is a good omen to find them being formed in each farming district.

At the same time it seems a very desirable thing to have unity between the societies in the various parts of the country. A representative committee appointed by the various bodies, to meet and discuss the many questions that may arise with regard to administration and the general carrying on of business would probably be of much use. One effect of the new Agricultural Co-operative Societies Ordinance will doubtless be to render such associations in future uniform in organisation and procedure, rendering combination amongst them possible and easy.

The constitution and rules of the society are as follows:—

EASTERN FARMERS' CO-OPERATIVE SOCIETY.

MEMORANDUM OF AGREEMENT entered into
this..... day of..... 1909, between

.....
farmers in the Eastern Electoral District of Southern Rhodesia hereinafter referred to as "The Society."

It is mutually agreed as follows:—

OBJECTS OF SOCIETY.

1. To organise and establish in the said District of Southern Rhodesia a co-operative Society composed of *bona fide* farmers and traders of European descent comprising those whose names are affixed hereto, and such others whose admission may hereafter be approved of, for any or all of the following purposes:—

- (a) The negotiation of loans and advances from Government or any other body or institution whatever, such loans to be applied for development purposes on the farms of the members of the said Society.
- (b) To purchase, on behalf of the members of the Society, farm requirements of all kinds, including seeds, fertilisers, agricultural machinery, fencing material, irrigation machinery and equipment, and such other articles and things as may be approved of by two-thirds of the members of the Society.
- (c) To make such arrangements as may be deemed advisable for the sale of all kinds of agricultural produce.
- (d) The erection and maintenance of depots, stores, offices, or any other buildings, or the lease and hire of such buildings for the joint use of the members of the Society.
- (e) To arrange for the establishment of market agencies, either in local or over-sea markets, for the disposal of produce in bulk or otherwise, and to devise schemes for the more convenient transit and sale of farm produce.
- (f) The purchase for the use of members of approved stud stock under such regulations as may be approved of by two-thirds of such members.
- (g) To carry on any other work of development incidental to the improvement of farming in the Eastern Electoral District of Southern Rhodesia.
- (h) To arrange for advances from the Bank or other institutions for the purposes of making advances on produce, and for such other purposes coming within the category of classes of business as defined in this agreement, as may be decided upon under powers granted by Clause 6 hereof.

2. All loans or advances negotiated by the Society shall be secured upon the joint and several promissory notes binding the members of the Society jointly and severally and *in solidum* for the discharge of such liabilities as may be incurred in any manner whatsoever, at such rate of interest as may be arranged between the Government Bankers, merchants, or others.

BOARD OF MANAGEMENT.

3. To appoint from said members such number not exceeding twelve to act as a Board of Management for the Society for the period between the date of this Agreement and the first Annual General Meeting. At the end of such period, and at each Annual General Meeting all members of the Board of Management shall retire out, but shall be eligible for re-election. The Board of Management shall be continued from year to year by election at each Annual General Meeting, all members of the Society being eligible for election.

4. To appoint from time to time a member of the Board of Management to be Chairman, and to appoint a Secretary and Treasurer who need not necessarily be a member (hereinafter referred to as "the Secretary") and to open an office at Umtali.

5. The Society to be styled THE EASTERN FARMERS' CO-OPERATIVE SOCIETY.

6. To co-operate for all the aforesaid purposes in such manner as the Board of Management may decide, subject, in all cases where the liability of the members of the Society is involved, to the approval of two-thirds of the members of the Society duly convened in special general meeting upon not less than fourteen days' notice.

VOTES BY PROXY.

6a. Notwithstanding anything contained in the foregoing Clause votes may be recorded personally or by proxy. The instrument appointing a proxy shall be in writing under the hand of the appointer, his attorney or other duly authorised agent.

6b. Every instrument of proxy shall be in the form or to the effect following and shall remain valid and in force until written notice revoking it shall reach the Secretary:

I..... of..... a member of the Eastern Farmers' Co-operative Society of Southern Rhodesia, hereby appoint of..... or failing him..... of..... as my proxy to vote for me on my behalf at any meeting of the Eastern Farmers' Co-operative Society and at any adjournment thereof.

As witness my hand at..... this day of.....

19 .

As witnesses:.....

ACCOUNTS OF SOCIETY.

7. To open an account at the Society's Bankers in the name of the Society.

8. To pay all monies received or contributed into such account.

9. To cause to be kept proper accounts and books, which shall always be open to the inspection of any member, and cause to be framed on the 31st day of March of every year, or as soon as possible thereafter, a general balance statement of the assets and liabilities, such statement to be signed by two of the members of the Board of Management.

10. The first Auditor or Auditors shall be appointed by the Board of Management, subsequently he or they shall be appointed by the Society at the Annual General Meeting, at which his or their remuneration shall be fixed.

11. All cheques to be signed by two members of the Board of Management and countersigned by the Secretary.

12. To make such charges upon purchases and sales of all commodities dealt with on behalf of its members as may

be necessary to cover the working expenses of the Society, and to provide for Capital and Reserve Fund.

13. The Annual General Meeting of the Society shall be held in the month of April for the consideration of audited statements of receipts and expenditure and for the transaction of such business as may be necessary.

14. The Board of Management shall arrange terms of credit with individual members and shall demand such further security as they may deem necessary.

15. The Board of Management may employ such persons as may be necessary to give full effect to the purposes of the Society, and arrange the remuneration of such employees.

REGULATIONS.

1. Every member shall bind himself to dispose of, through the Society, the whole of his stock of Maize, Ropoko, Munga, Wheat, Kafir Corn, Buckwheat, Barley, Oats, Peas, Beans, Monkey Nuts, Forage, Fodder, Hay, Chaff, grown in Rhodesian Territory, with the exception of what he requires for his own farming and domestic purposes. This list is subject to revision at the Annual General Meetings of the Society, on the vote of two-thirds of the members, on the advice of the outgoing Board of Management.

2. Any other farm produce may be consigned at the members' own risk. The Society shall dispose of this to the best advantage, and charge such commission as the Board of Management may decide.

3. Notwithstanding anything contained in Clause 1 of these Regulations or elsewhere, members shall be allowed with the consent of the Board of Management to dispose of a limited amount of seed for their own benefit. All sales shall, however, be through the Society, and the amount obtained shall appear in the Society's books, and the commission shall be the same as chargeable for produce received under Clause 2 hereof.

4. As soon as a member shall have delivered any produce enumerated in Clause 1 hereof he shall begin immediately to share in the amounts received by the Society on account of sales made, in proportion to the quantity so delivered by him at a basis price to be fixed by the Board of Management.

5. Should the Board of Management fix the basis price higher than the average price obtained throughout the year, the excess paid to members to be refunded by such members to the Society when called upon to do so.

6. At the end of each financial year the average price obtained for each kind of produce shall be arrived at after deducting Transport, Storage and Insurance Charges, and losses of all kinds, from the gross receipts, and each member shall be entitled to receive the average price thus arrived at, less 10 per cent.

7. After deducting working expenses from the ten per cent. deducted as above, a sum up to and not exceeding one-quarter of this amount shall be placed to the Credit of Capital account. Any sum remaining over shall be dealt with in accordance with the decision of the majority of members present at the Annual General Meeting.

8. The amount placed to the Credit of Capital Account shall be apportioned among members in direct ratio to their contributions, and shall carry interest at the rate of (6 per cent) six per cent. per annum, which interest shall be payable annually.

9. Subject to the completion of financial arrangements with the Bank, members may receive a fifty per cent. (50 %) advance on the basis value of all produce enumerated in Clause 1 hereof, delivered by them to the Society, such advance not to exceed 5s. per bag of 203 pounds in the case of Maize; such advance to bear interest at the Bank rate and be repayable month by month as the members' produce is disposed of. Half the amount of sales to be devoted to the repayment of advance.

10. Notwithstanding anything contained in these Regulations, the Society is not bound to find storage for perishable produce, such as Potatoes, Sweet Potatoes, and other produce as in the opinion of the Board of Management may come under this category, which can only be accepted when ordered by the Board of Management in quantities to suit the Market. No advances shall be made on such perishable produce.

11. Members must inform the Board of Management in writing of the quantity of their crops immediately after harvesting, and the amount they intend holding back for farming and domestic use. If the crop of a member be damaged or destroyed through circumstances beyond his

control, so that he cannot fulfil his engagements towards the Society, he will be relieved of his obligations in respect of such crop if he instantly advises the Committee to that effect. If any member fails to fulfil his engagements towards the Society without the reason provided for in the foregoing he shall be responsible for any loss and damage the Society might sustain through his action.

12. Notwithstanding the provisions contained in Clause 1 of these Regulations, prospective members who have pledged part or the whole of their crops before joining the Society shall be released from their obligations to the extent of their pledges, on forwarding a written statement of the same to the Board of Management, but not otherwise be debarred from exercising the other privileges of membership.

13. Every member must at the time of entrance sign his name in the Memorandum of Agreement and by his signature bind himself to the existing Regulations and any additional regulations or alterations of regulations which may be lawfully made from time to time without any notice from the Society being required.

14. A member may resign at the end of a financial year provided he has given the Secretary three months prior notice in writing. The acknowledgment of such notice of resignation must be made in writing by the Secretary with as little delay as possible. Any member so resigning shall be entitled to withdraw from the funds of the Society any sums of money contributed by him as and for capital in terms of Clause 7 of these Regulations. A member may be expelled at a special General Meeting called for the purpose. Resigned or expelled members have no claim on the reserve fund created by the Society.

15. Depots shall be established at Umtali, Old Umtali, and Inodzi, and any other centre the Board of Management may consider necessary.

16. Delivery of produce shall be made at the Umtali Depots by the consigning member, unless it shall, in the opinion of the Board of Management be more advantageous to the Society that delivery be made elsewhere. Position of member in regard to Market, and extra expense entailed by any change of Depot to receive proper consideration by the Board of Management in any alteration of that centre. Cost of delivery to Depot shall be borne by the consigning member.

17. The cost of transference of produce from Depot to Depot or to Consumer, and storage and Insurance charges shall be a debit against the gross receipts of the Society.

18. Members must give the Secretary seven days notice before consigning.

19. A representative of the Society shall be appointed at each Depot. Upon delivery of the produce at a Depot in good condition a receipt shall be given to the consigning member or his representative, and the responsibility of handling, storing and disposing of such produce shall thereupon be assumed by the Society. The representative of the Society at each Depot shall have the right of refusing acceptance if such produce in his opinion is not in good order nor in a marketable condition. Produce rejected may be disposed of by the member, or by the Society, at his request.

20. Every member shall register a distinguishing mark with the Society, which he shall place on every package of produce sent in by him for disposal.

21. The purposes for which loans can be used for the year 1909-1910 in terms of Section 1, Clause H of the Memorandum of Agreement shall be:—

- (a) For furnishing advances on produce in terms of these Regulations.
- (b) For the purposes stated in Section 1, Clauses C., D., and E., of the Memorandum of Agreement, provided that the sum borrowed under this head shall not exceed £250 (Two hundred and fifty pounds sterling).

22. A special General Meeting shall be called at any time upon the requisition signed by not less than ten members sent to the Secretary at least twenty-one days before such meeting is to be held. The special business for which the meeting is to be called must be stated on the requisition.

23. The position of a member of the Board of Management shall be honorary, but travelling and out of pocket expenses shall be refunded when travelling on the business of the Society.

24. Meetings of the Board of Management shall be held as often as may be necessary. At all such meetings three shall form a quorum. All vacancies occurring from whatever cause shall be filled by the remaining members of the Board.

25. Any member of the Society shall have the right to attend any meeting of the Board of Management in order to bring forward any special matter of grievance.

26. The first Board of Management shall consist of the following :—

Messrs. C. S. Heron, C. Boyd-Clark, Frank Lapham, Ll. Lloyd, E. L. Wright, R. W. Cockerell, J. Meikle, L. Cripps, E. M. Webber, who shall hold office until the first Annual General Meeting. The first Chairman of the Society shall be Mr. J. Meikle, and the first Secretary and Treasurer shall be the Secretary of the Manica Board of Executors, Limited.

27. All meetings shall be convened by notice posted to the members at their address fourteen days before the day appointed for the meeting.

28. No alterations of the present Regulations shall be made except at a meeting specially called for the purpose at which at least one-third of the members registered on the books of the Society shall be present.

A Winter Grass.

By F. E. WIENHOLT, Inyanga.

As it may be of interest to some of your subscribers, I write to give you my experience here of the new grass "*Phalaris commutata*" that is attracting much attention throughout the Southern Colonies.

I procured two ounces of seed last year which cost me £1 per ounce. This I sowed in a small plot in my kitchen garden on February 12th, 1908. It grew luxuriously through the Winter months, never changing its colour,—a vivid green; when it seeded, the heads of seed stalks were over 5 feet high.

Early in October I planted out about 50 roots, a foot apart each way, these have now overlapped and are seeding.

I have just planted out 18,000 plants from this same two ounces sown in February and have collected a fair number of seed heads which are ripening. I have sown 6 rows 18 yards long from seed already ripened, and this is just coming through the ground.

I believe seed can now be purchased in Australia for 5s. an ounce.

It is certainly the most promising looking grass yet grown in my experiments here.

It is very deep-rooted, which makes it so drought resistant, and frost does not appear to affect it.

Any farmer buying a few ounces and then transplanting the roots out the following Summer, will have a lovely evergreen pasture, and should never regret having tried this grass.

[NOTE.—It would appear from an article written by Dr. Ewart, Government Botanist, and Professor of Botany at Melbourne College, in the "Agricultural Journal" of Victoria, that this new Winter grass has been imported into South Africa under an incorrect name, and some discussion has recently taken place concerning it.

Dr. Ewart states that the grass came from the Agricultural Department of New York about twenty years ago, with about sixty other grasses. The controversy concerns the specific name, and as some very weighty authorities in Botanical science disagree on the subject, it will be well to be content for the present with *Phalaris* sp. and for popular purposes it has the euphonious title of "Toowoomba grass."

Touching the economic value of this grass Dr. Ewart states:—

"The reports on this grass were conflicting, but it is generally agreed that it grows well in winter, seeding itself in December, when it becomes hard and coarse."

At the Experimental Nursery, Salisbury, seed sown in Nursery beds towards the end of January have come up well and a quantity of transplants will be available next planting season.—ACTING EDITOR.]

An Economic Botanical Collection.

£15 IN PRIZES FOR SCHOOL CHILDREN IN RHODESIA.

Attention is directed to a series of prizes offered to School Children throughout Rhodesia, and rendered as simple as possible to encourage numbers to compete. The conditions offered sufficiently explain themselves.

The desire is to gain information with regard to the possible economic importance whether as products of commercial value or because of the dangerous or objectional properties of plants found in different parts of the country.

It is possible that by this means things of great utility may be brought to notice, at the least the distribution of certain plants or trees with useful qualities will be learned.

Within the limits of Rhodesia, with its varied conditions of soil and climate, and such natural flora, there are doubtless to be found natural products of considerable value if their existence can but be brought to the notice of those requiring them, or if methods of profitable exploitation can but be devised for their extraction, culture or manufacture.

Though offered as prizes to children, there is no reason why adults should not assist in this work, either by contributing to collections or sending specimens direct to the Department of Agriculture.

When this is done all information possible should be supplied as mentioned in the directions given, and especially as regards quantities available and costs. Such products will be examined and every endeavour made to ascertain what markets exist or can be made.

The process is necessarily a slow one, but the reward, should even one or two commodities of value be brought to notice, may well be worth all the trouble and time involved.

PRIZES AND RULES OF COMPETITION FOR THE BEST COLLECTION OF PLANTS OF ECONOMIC IMPORTANCE.

(1) The prizes under-mentioned are offered by the Department of Agriculture to pupils in schools throughout Southern Rhodesia for the best collection of dried specimens of plants of economic importance growing within the

Territory. Collections need not be very large to secure a prize.

(2) Several scholars may join together for the purposes of the collection. Competitors need not personally have collected all the specimens or the facts concerning them.

(3) With each specimen the following particulars should be supplied as far as possible.

- (a) English and native name, if any.
- (b) Habitat or kind of place where found growing, *e.g.*, if marshy, dry ground, etc.
- (c) Date.
- (d) Approximate altitude.
- (e) Geographical position or locality.
- (f) Colour of flowers.
- (g) Height or usual size of plants.
- (h) Use or property such as grazing, hay, fencing, tanning, oil, fibre, stain, bark, medicine, poison, food, grain, gum, timber, weed and so on. It should be clearly stated what part of the plant has the use or property above described.

(4) Each collection is not to exceed 100 specimens and each specimen is not to exceed as much as will lie upon one sheet of paper 10 by 16 inches (any larger are to be folded to the size or cut and arranged upon two sheets). Specimens need not be mounted but may lie loose upon sheets of old newspaper. Specimens of wood, which should include a piece of the bark and not be less than 6" by 8" by 2", should be accompanied by twigs showing leaves, flowers, fruit, etc. Likewise specimens of bark.

(5) The specimens are to be sent to the undersigned and are to remain the property of the Department of Agriculture.

(6) The crops ordinarily grown by Europeans are not to be included in the collection.

(7) The prizes will be :—

For the best collection	£4
For the next collection	£3
For the five next best collections ...	£1 each.
For the six next best collections ...	10s. each.

(8) The undersigned will be the judge of merit, but reserves the right of withholding any of the prizes in cases where the degree of merit appears insufficient.

(9) In judging of merit regard will be had :—

(a) To the selection of the plants.

(b) To the completeness of the specimens, showing flower and fruit, leaves, stem and roots.

(c) To the completeness of the history of the specimens.

(d) And to the manner of drying, complete and under proper pressure, due regard being given to the character of the specimen. Specimens are better dried the more frequently they are changed into fresh dry paper (newspaper suffices).

Competing specimens may be sent in any time up till the 28th of February, 1910.

(Signed) ERIC A. NOBBS,

Director of Agriculture.

National Afforestation.

By C. E. F. ALLEN, Department of Agriculture.

There is a worldwide movement taking place at present towards the solving of the many problems of national afforestation. A recent conference on world resources met at Washington at the invitation of the President of the U.S. of America and included representatives from the United States, the Dominion of Canada, Newfoundland, and Mexico. It was proposed to embrace all nations in the movement by means of an international conference to be held on world resources, at the Hague next September. In a declaration of principles the objects enumerated include Public Health, Forests, Waters, Lands, and Game Protection. Under Forests, the declaration reads "We recognize the forests as indispensable to civilization and public welfare. They furnish material for construction and manufacture, and promote the habitability of the earth. We regard the wise use, effective protection, especially from fire, and prompt renewal of forests on lands best adapted to such use as a public duty devolving upon all forest owners alike, whether public, corporate, or individual." One of the speakers, Mr. Charles L. Pack, of the National Conservation Commission, recalled the estimates made 25 or 30 years ago of the timber then remaining in the United States of America. It was thought at that time that the forests would last two or three hundred years. Now it was well understood that the virgin supplies would be gone in thirty or forty years.

A Royal Commission sat in England recently on the question of afforestation and their report appears to have occasioned a good deal of discussion. The Commission stated that in less than thirty years, there would be no timber available unless the different countries of the world proceed at once with replanting.

At a recent meeting of the Authors Club, Mr. Pember Reeves stated "that the forests of New Zealand within sixty years had been reduced from 30 to 17 million acres and pleaded that the question was something more than insular, since there was a danger that forests were disappearing off the temperate zones of the earth, and advised that in this matter the mother country should set an example to the Colonies." ("Field," April 3, 1909.)

Conferences, Commissions, and meetings on an important subject as this do some good if only to give impetus to planting and care of forests. Tree planting may appear to the majority of Rhodesians to-day to be an undertaking wherein the return is too slow to be worth bothering about. This is not so. Once a plantation has become established it has an inherent value. After the first three years it begins to yield shelter for the cattle and crops, wood for the fire, health to the people and beauty to the landscape. Besides all these minor benefits the trees are ever increasing in size and value. A well wooded country is also a generous agricultural one. There are localities round some of the mines where timber for fuel is already becoming scarce. In places situated at a distance from the coal fields and often a long way from the railway it is imperative that there be a constant supply of wood for fuel and other purposes. There is no substitute for wood as fuel in these places. The remedy is to plant on an acre for an acre principle and so make sure of some of the gaps made to-day being filled in time to come. Reforms are needed in this country to prevent the burning of the veld, and are to be gained only by public interest being awakened. The law of the country is already very strong on the subject, but the difficulties to be contended with in the carrying out of these laws are great. To trace the origin of a fire is often a puzzle in large towns, how much more difficult is it in a vast country such as this. Many of the fires are probably started by natives who are more or less ignorant of the damage they may be doing. Particular care should be taken when burning grass that good fire paths enclose the fire. On most of the farms to-day firepaths are cut round the lands and this makes it difficult for a fire to come on or go off the farm.

With fewer fires the indigenous timber trees would have a much better chance of making straight and useful timber than they have to-day.

With regard to planting, no one can make a living straight away by tree planting but it would be a profitable undertaking to plant to some extent every year. The subject is worthy of serious thought by all who have a stake in the country, and most of us claim some affection for the country of our adoption. Here then is an opportunity to show the worth of our professions.

Poultry.

By PHILIP L. HALL, Lanham Farm, Syringa.

Several cases of wholesale deaths in the poultry yard have been brought to notice recently; these periodical outbreaks are serious enough to merit the closest investigation by all interested in the poultry rearing industry. Up to the present little appears to have been done to ascertain the cause and nature of the disease. The average poultry keeper will inform you that his birds died of "fowl sickness." Seldom, if ever, do you hear of a fowl dying of any other complaint. That a disease of a very virulent nature exists there is no room for doubt, but until careful examinations are conducted by those who suffer these heavy losses, and the reports collected, little can be done in the manner of dealing with it. I purpose in this article giving some brief details which may assist the amateur in making a practical examination of a dead bird, and perhaps enable him to locate the disease that brought about death.

It will greatly simplify matters if we divide the internal organs into three parts, viz. :—1. the organs of respiration; 2. digestion; 3. reproduction. The first of these consists of the lungs and heart. Air is inhaled into the lungs where it comes in contact with, and is absorbed by, the blood. The latter, as we are all aware, circulates through the whole system, and in doing so the oxygen of the air which it contains is brought into contact with the absorbed constituents of the food, and chemical action producing the warmth and life of the body results. Thus the heart and lungs are inseparably connected and are the most important organs of respiration. The portals through which the air enters the body are the nostrils, situated at the upper part of the base of the beak. Then, just behind the tongue, there is a small slit, called the glottis, which in a living fowl is seen to be expanding and contracting as the bird breathes, and which is the entrance to the trachea or wind-pipe, the channel through which the air passes to the lungs.

It is now necessary to trace the course of some food which is swallowed by a fowl and note the various portions of that passage from the back to the cloaca, known as the

alimentary canal. It is common knowledge that the food is swallowed whole and enters first the crop,—which is a distended or enlarged portion of the gullet, and situated between the outer skins of the front part of the breast and the inner carcase. In the crop the food is softened and prepared for further treatment. Passing on it enters another distended portion of the alimentary canal called the procutrical—really the fowl's stomach—where it is still further acted upon by the gastric juices secreted by the walls of that organ. Then the food enters the gizzard, which is a tough muscular organ containing a number of small stones which the fowl swallows. Here a grinding process goes on until the food is reduced to a soft state, after which it passes out into a small intestine carrying with it those particles of grit which have become smooth and of no further use. The food in the small intestine is now treated by the bile, a fluid secreted by the liver, and by the pancreatic juice, so that it comes into such a condition as enables it to be assimilated. Any refuse, disused grit, and other substances of no use are passed away by the rectum, and the kidneys extract from the blood any remaining impurities that it may have absorbed from the food or which have been formed in the chemical changes taking place during the process of assimilation.

Of the reproductive organs little need be said, but it is worthy of note, that in a hen that is laying, or is about to do so, a cluster of ova, or embryo eggs, may be seen attached to the back. These are of varying sizes, from that of a yolk of an egg to a speck that is almost invisible. In fact each of these ova, when mature, is a complete yolk and nothing more, and as they attain their full dimensions they break away from the cluster and enter the oviduct, which is a long winding passage from the ovary to the vent. During its passage along the oviduct the yolk first becomes covered with white or albumen, then the membrane is added, finally the shell, and the perfect egg is expelled. Having so far taken a brief survey of the general uses of the principal organs of the fowl, it will be easier to understand the process of performing a post-mortem examination.

(To be continued.)

Cedrela Toona.

By C. E. F. ALLEN, Department of Agriculture,
S. Rhodesia.

The Toon-Wood Tree can be recommended for planting in Rhodesia with confidence. It has grown well in various parts of the country such as at Livingstone, the Matopos Park, and near Salisbury in several places. It is apparently ant-proof, and will be a particularly good tree for planting on hillsides. At one time it was common in the Himalayas, and a height of 80 feet with a girth up to 20 feet was an ordinary sized tree. Cutting for timber in large quantities has now considerably reduced the number of trees of these dimensions in that country. The timber is known on the English Market as "Moulmien Cedar." The wood is described as brick-red, soft, shiny, even but open grain, seasons readily and rarely warps or splits. It is used for wood-carving, fine cabinet work and general purposes, it is used in the manufacture of cigar boxes very largely. The wood has no tainting aroma. From the bark an oil has been extracted and used with some success in the cure of dysentery. Cattle in India are fond of the leaves and young shoots.

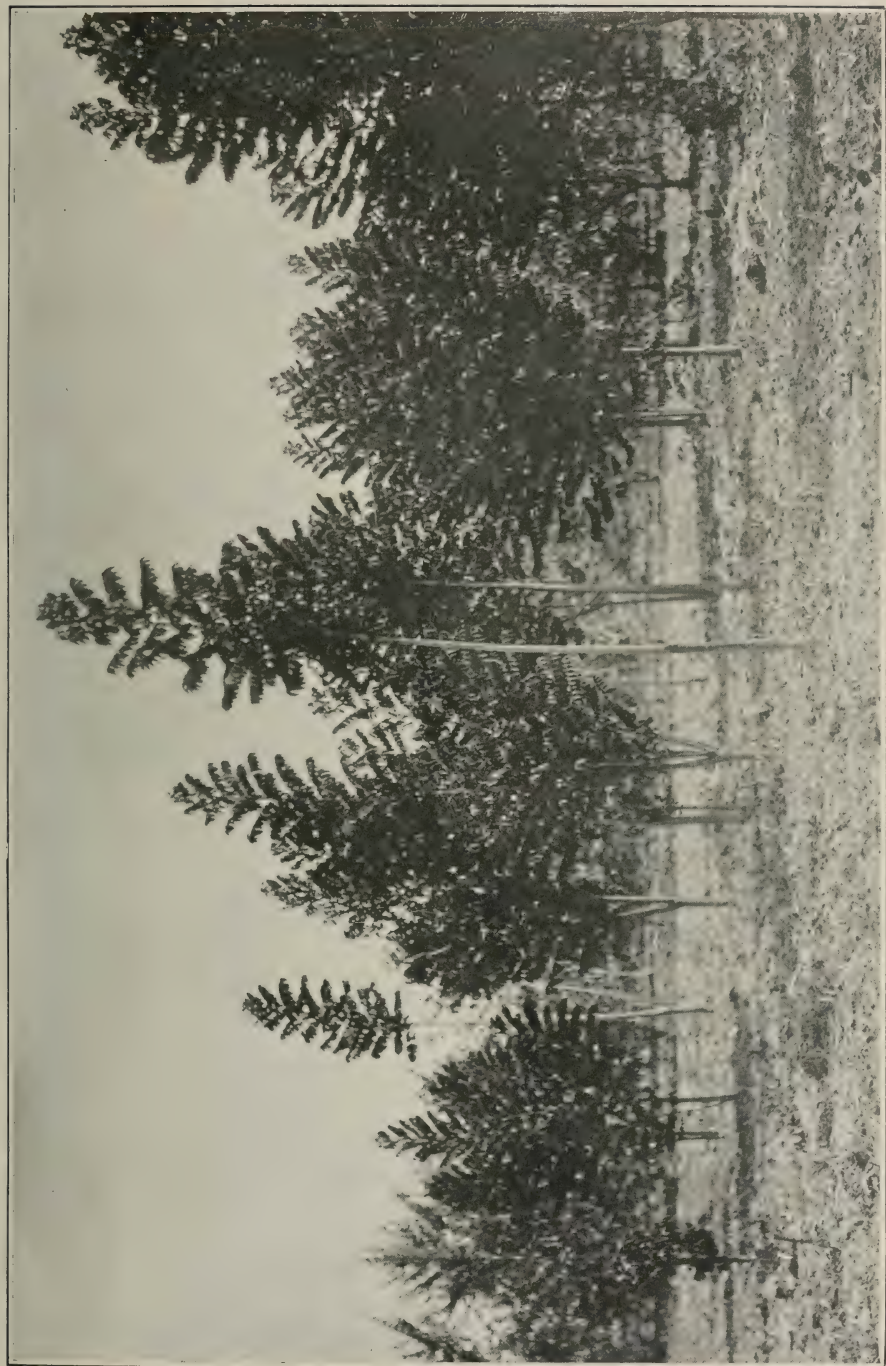


Photo by]

Cedrela Toona, at Experimental Nursery, Salisbury.

[C. E. F. Allen.

Sesbania Punctata.

By ERIC A. NOBBS, Ph.D., Director of Agriculture.

A discovery of much possible value and great interest has been made at Westacre in the Matopos. Recently Mr. J. G. Macdonald of Bulawayo forwarded to the department of Agriculture specimens of a leguminous plant bearing large quantities of nitrogen forming nodules on its roots. It had been observed by Mr. Hull that at Westacre land on which this herb, originally regarded as a weed, had grown, supported much better crops of lucerne and oats than elsewhere. A specimen has been identified at the Royal Botanic Gardens, Kew, as *Sesbania punctata*. This is interesting in that recently in India a nearly related plant *Sesbania aculeata*, "Dainchu," has attracted attention and is there recommended as a green manure for paddy fields on account of its recognized fertilizing properties. The plant found at Westacre appears to be widely distributed in Rhodesia and another form possibly new to science was found by Mr. C. E. F. Allen occurring plentifully in the Zambesi Valley near the Victoria Falls. The indigenous occurrence and free growth sufficiently proves its suitability to the country. It only remains to avail ourselves of the good things bestowed upon us. In a land where artificial fertilisers are practically excluded by distance any other means of enriching the soil must be grasped. By growing this plant as a crop and ploughing it in while in flower and before it seeds the ground will be provided with nitrogen, the most costly of all plant food, for future crops, and a supply of organisms provided to inoculate any other leguminous crop such as lucerne, beans, that may be sown. Whether in this respect it is superior to cowpeas, lupins, or velvet beans experiment can alone show, but from reports received this seems quite likely to be the case.

Agricultural Reports.

(Compiled.)

A general impression gathered from reading the reports sent in by the courtesy of Rainfall Observers and others in various parts of the country is distinctly optimistic. Crops are reported good everywhere, and in most agricultural districts are above the average.

From Helvetia we hear that the coffee crop will be good, the trees being very healthy and loaded with berries. Maize crops both European and native are also extremely good, while the natives in the Sabi Valley have crops that will make up for the several years famine they have experienced.

Lions, wild dogs, and leopards have been more troublesome than usual.

From Enkeldoorn we learn that in the Charter district, everything has been in favour of Agriculture this season. The rains have been seasonable and well distributed. The crops everywhere are very fine and grain will be plentiful. The pasturage is all that can be desired. Horsesickness has been exceptionally severe and numbers of horses and mules have died. All other stock have been healthy and are now in superb condition. Locusts have been conspicuous by their absence. There have been no great efforts towards progress. On some few farms fencing has been done, otherwise the usual yearly crops and rearing of stock have alone occupied the attention of the farmers. It is unfortunate that this season should have been a severe one for human beings, horses and mules. Malaria has been rife and the trekkers who came up in the early part of the season have not had a favourable introduction to the country.

At Mrewas the native crops are above the average. European crops suffered in low lying lands from rust but not to any great extent—and only in the earlier planted fields. Potato crops are poor—no Tobacco is grown in this district. Most of the farmers have built comfortable brick homesteads. Irrigation schemes are contemplated and will be taken in hand this winter. Native labour has been scarce.

Sergeant Potter of the B.S.A. Police stationed at Tuli writes:—

“There are no European farmers in my district. The native crops though late, are excellent and fairly heavy, the lateness of the crops is accounted for by the scarcity of rain towards the latter end of last year, but since then rain has been plentiful, and all natives spoken to, and met by patrols, express themselves very well satisfied and expect a very good harvest.

“Owing to the abundant grazing everywhere and the water within easy reach, all stock are in very good condition, there seems to be no sickness at all, in all the various districts visited by police patrols, the same thing is reported.

“The season although late has been generally speaking a very good one, lately it has been exceptionally hot for this time of the year, but the great heat is followed as a rule by a heavy thunderstorm. From an agricultural point of view, I should think it has been an exceptionally good late season.

“Owing to the very few white inhabitants in this vicinity, progress is practically at a standstill, although when the rivers (Crocodile and Limpopo) are fordable, a considerable number of desirable immigrants come through this Territory.”

In the Matopos all crops, including those of the natives, are in splendid condition and quite surpassing all previous crops in that district for the last six seasons.

In the Mazoe and Gwibi districts wonderful crops are visible everywhere.

In the Victoria native district, the crops which at one time, in the early part of the season, did not promise well are now reported as being good. Near Syringa the yield and quality of the Maize and crops are said to be only fair. Mealie harvesting has begun in many districts. From all parts of the country rust in the mealies is reported this year, generally it does not appear to have damaged the crops to any appreciable extent. Root crops, potatoes, etc., are very good in Matabeleland and in Mashonaland, fair in most places, and good in a few. In the Transvaal a shortage of potatoes exists owing to the bad effects of the heavy late rains, and some of the produce merchants there have recently made serious inquiries as to possibilities of buying potatoes in Rhodesia to supply their

markets. Some doubt appears to exist as to whether we can spare any large quantity this year.

The season has been a good one to most farmers in the country in all agricultural aspects.

Tobacco has not been grown on as large a scale as last year, there is however a considerable acreage under this crop in the country.

Importations of well bred cattle have been numerous, some few of these have been unfortunately lost through Redwater, but most have survived the sickness and become, more or less, immune from further serious attacks.

Dates of Agricultural Shows and Meetings of Farmers' Associations, 1909.

AGRICULTURAL SHOWS, 1909.

Salisbury:—25th and 26th June.

Bulawayo:—16th and 17th June.

Umtali:—11th June.

Melsetter:—Not fixed.

FARMERS' MEETINGS.

Name of Association.	Place of Meeting.	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Enkeldoorn F. Association	Enkeldoorn ...	26	31	28	25	30	27	25
Lomagundi	Eldorado Mine	12	10	14	11	9	13	11
Makoni	Rusapi ...	16	...	...	15	...	...	15
Marandellas	Marandellas ...	5	...	7	...	2	...	4
Mashonaland	Salisbury, 1 p.m.	5	3	7	4	2	6	4
Manica F. & Landowners Association.	Umtali ...	5	3	7	4	2	6	4
Rhodesian Landowners & Farmers Association.	Bulawayo, 3 p.m.	24	29	26	30	28	25	30
Do.	Matopos ...	27	25	29	26	31	28	26
Do.	Plumtree ...	...	1	...	...	7	...	...
Do.	Figtrees ...	...	...	...	...	...	...	...
Eastern District of Victoria	Farm Good Hope	12	...	7	...	...	6	...

The Rhodesian Landowners and Farmers' Association hold a General Meeting at Bulawayo on June 18th.

The Rhodesian Agricultural Union Congress meets at Salisbury on the 29th and 30th of June.



[Photo by]

Plantains at the Homestead of Mr. H. Kirkman.

[C. E. F. Allen.

The Plantain.

By C. E. F. ALLEN.

Much confusion exists in botanical and economic literature in the nomenclature of the species of *Musa*. *Musa paradisiaca* is the generally accepted source of the plantain or larger bananas, while *Musa sapientum* is the smaller sweeter fruit called the banana. There are however many other species in commerce in different parts of the world, and no well marked distinction is recognised by botanists.

A practical line to take up is to call the larger, coarser varieties the plantain, and the smaller and sweeter, the banana, and to consider them as varieties of one family,—the one a vegetable and the other a fruit. In this article the Plantain is the subject under discussion. As a profitable undertaking for farmers, more particularly those having a local market in the large mining compounds, this crop deserves more attention than has hitherto been given it.

The plantain is one of the easiest plants in the world to grow once it has become established in a suitable position. In countries where the food is the national diet of the people the lower slopes of the hillsides are the usual places planted. The plantain likes moisture and warmth,—the lee side of a Kopje with shelter from the East Winds, moisture from the hills, rich land to grow in, and drainage for the roots appears to be the ideal site. It should be high enough to escape the severe frost that occurs in the valleys. The means of propagation and increment are young suckers which spring up round the old plant in abundance in a healthy grove. These should be planted out when about 3 feet high. In removing from the parent plant scrape the soil away to a depth sufficient to show the connection between the old and young plant, and then cut with an axe or sharp spade. Some difference of opinion exists as to what room should be given the young transplants. In British Guiana plantations they are set six yards apart in rows, and between the rows yams, maize, etc., are planted. In India 14 feet is the distance recommended. If there is sufficient moisture, wide planting is practical in this country, even then it possibly

would reduce the first year's crop, but the planter reaps the benefit of interculture of some minor crop of beans or other fertilizing plant, and gains in subsequent yields, and less thinning is necessary. Generally with the long dry winters 10 feet in rows and 10 feet between is the distance best to be adopted here.

The plantation after it has become established should be given frequent mulching with old farm-yard manures to make a deep tilth of mould which holds the moisture and keeps the roots cool and healthy. Much of the chances of success of the crop depends on this being well done. When fruit is forming the flower stalk should be watched, and when abortive attempts of forming fruit are noticeable beyond the ring of young fruit the flower should be cut off leaving an inch or two of stalk beyond the last formed fruit. If this is not done the flower head goes on growing and takes a lot of the goodness out of the plant that should go to the fruit. Dead leaves and old stalks of plants that have fruited should be left on the ground. The young suckers should be removed regularly from the older plants as soon as they are three feet high, leaving at most three suckers to bear fruit the following season.

In Ceylon 70 lbs. is an ordinary weight of a bunch, but from observations made of the bunches seen here 30 to 40 lbs. seems to be the usual weight obtained. Planting 10 by 10 feet means roughly 440 plants per acre. In the first season perhaps 75 per cent. only would bear fruit, but the second year an average of two bunches per stool should be returned, this would yield at the minimum rate of 30 lbs. per bunch,—26,400 lbs. per acre, or a weight equal to 132 bags of mealies.

The season of fruiting is practically continuous in a large grove, though naturally the heaviest crop is picked after the rains.

Plantain meal is prepared by the natives of Central Africa for storing and sale. They simply slice the fruit, dry it in sun and grind or pound it to powder. In Mexico, according to Colonel Colquhoun, the fruits are exposed to the sun, when they begin to wrinkle they are peeled. If the skin is not removed a bad taste is imparted to the fruit. They are kept for some time until an efflorescence of sugar appears on their surface, and are then pressed in masses of about 25 lbs. each and placed in boxes, or wrapped in dry banana leaves.

Epitome of Cattle Inspectors' Returns.

MARCH, 1909.

BULAWAYO.

With the exception of one truck of imported sheep affected with scab, no disease was reported.

GWELO.

African Coast Fever.

No sickness reported amongst the test cattle placed on the old infected area.

UMTALI.

African Coast Fever.

No fresh outbreaks. No cases of Coast Fever have occurred during the month.

Malarial Catarrhal Fever in Sheep.

Has shown itself more mildly during the present season of prevalence.

Horse Sickness

Two horses died. Six inoculated mules contracted the disease four of which died.

VICTORIA

Rabies.

Two cases amongst the coach mules on the Victoria Selukwe road.

Horse Sickness.

Four deaths.

ENKELDOORN.

Horse Sickness.

Five horses and three mules died and two horses and three mules reported having recovered.

SALISBURY.

Rabies.

One outbreak occurred.

All other districts no disease reported.

J. M. SINCLAIR,

Chief Veterinary Surgeon.

Weather Bureau.

AGRICULTURAL DEPARTMENT.

Summary of Rainfall for the months dated September 1st, 1908, to 31st March, 1909, at twenty-two Stations in Southern Rhodesia:

Name of Station.	March.	Total for 7 months ended March 31, 1909.
<i>Mashonaland :—</i>		
Chishawasha	2·62	41·30
Enkeldoorn	1·97	26·11
Gadzema (Giant Mine) ...	6·19	36·12
Hartley	6·47	37·78
Helvetia (S. Melsetter) ...	12·40	63·89
Inyanga	4·52	33·33
Marandellas	2·91	27·42
Mount Darwin	1·02	34·39
Penhalonga (Umtali) ...	5·80	45·01
Sinoia	1·31	30·07
Salisbury	1·71	36·44
Victoria	2·91	25·36
<i>Matabeleland :—</i>		
Bulawayo	7·93	32·14
Filabusi	4·60	28·05
Fort Rixon	3·12	18·76
Gwelo	3·22	27·49
Hope Fountain	4·31	29·51
Matopo Park	3·74	21·70
Nyamandhlovu	4·80	27·47
Shiloh	5·15	21·84
Tegwani	3·04	28·57
Victoria Falls	12·26	36·97

REMARKS.

Since reporting in this "Journal" on the rainfall recorded at various stations in Southern Rhodesia for the six months ended February, a considerable addition for the time of year has been made to the amount of rain registered to that date.

In the Summary published herewith it will be noticed that the returns of these few stations for March indicate

a heavier rainfall in Matabeleland generally than in Mashonaland. Melssetter is of course an exception as this part of the country is influenced by the coastal rains, as they are first caught here in their course from the Indian Ocean. The rainfall for the station at Helvetia in this district since 1st September, 1908, to 31st March, totals 63.89 inches.

During April very few stations record 2 inches, and many of them less than one.

The rains are, generally throughout the country, somewhat above the average.

Night temperatures for April have remained high. At most of the Thermometric Stations up to the end of April, the self registering minimum Thermometers in screen have not recorded any temperature below 40° fahr. generally being over 50° fahr. At Westacre a frost of 16° is reported on the last day of the month, doing considerable damage to the crops.

C. E. F. ALLEN,

Officer in Charge, Weather Bureau.

Correspondence.

BREAD MAKING.

By a Rhodesian Farmer's Wife.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

DEAR SIR,—

As a Transvaal, and now a Rhodesian Farmer's wife, I know the difficulties of a young wife in preparing bread, and though many methods may be tried,—and all be good,—it is only practice which will make a good bread maker and baker.

I have made bread for 25 years, and tried many ways, and the following I find the best. Do not give up if the first or second trials are not successful:—

I. Making Yeast.—Take a heaped table-spoon of lightly packed hops, boil in a bottle of water till the hops sink, strain into a jug, add another bottle of cold water,

pour into two white glass bottles, filling up to neck, put into each bottle one tea-spoonful each of salt and of sugar, and two teaspoonfuls of flour.

II. Yeast fit for use.—When a slight beading appears on top round the edge of the glass, it is fit for use. In making the first time keep one bottle in a warm place, and put two or three raisins, or a mashed boiled potato in it to hasten the ferment, but do not use them on every occasion, for it causes the yeast to become acid in hot weather, and the bread unpleasantly sour.

When refilling the bottles wash them out, but keep two teaspoonfuls of the old yeast and put it into one of the bottles of the new to start the next lot.

III. How to make bread.—The night before baking take half a bottle of the yeast and half a cup of warm water, mix with flour to a batter, cover and keep warm.

Next morning take 7 lbs. of flour, or meal, two teaspoonfuls of salt, one teaspoonful of sugar, the yeast, and sufficient warm water to make into a nice firm dough, not too stiff. Cover with a clean cloth and place in a warm old blanket (kept for bread) for one or two hours according to the weather. As soon as it begins to rise get your pans greased, knead the dough, cut it into four, place it in the pans and allow it to rise from half an hour to an hour, till it begins to crack, then place in a nice hot oven, which must be allowed to get cooler after the bread is in. Many bread makers do not have the oven hot enough to *begin* with, but raise the heat *after the bread is in*, this is a mistake, and makes the crust thick and hard. In a good oven bake one hour.

Having six big sons and daughters as well as husband and self we find Inyouti Bread far nicer and more economic than all wheat bread.

Follow the instructions given for making yeast the night before baking as above. Next morning take a pot of boiling water, add ground Inyouti sifted or not (both are good) make a stiff porridge, put into kneading dish, add salt, a teaspoonful of sugar, one tablespoonful or more of dripping, butter, or cream, and let it get cool; next add the yeast and knead in sufficient flour, or No. I. meal to make a nice dough, divide into loaves, put into greased pans, cover, and leave to rise in a warm place, and bake.

The Inyouti bread is really very delicious and ought to be better known. I am famed (of course just amongst my immediate neighbours) for my Inyouti bread. So much money goes out of the country for Wheaten meal and flour, and Inyouti is very nutritious. I hope some day you will tell us the relative value of bread stuffs.

By a Farmer's Wife.

Yeast.—To six pints of water add two large potatoes in skins, cut up, one handful of hops, one small handful of coarse salt, and boil for one hour, and then strain. Mix into a thin paste four tablespoonfuls of sugar (cold water) add to the strained liquid and boil for one hour, stir occasionally to prevent burning. When cold, bottle and tie down corks. See that it is fermenting before making bread.

To make bread.—To five pounds of flour add one bottle of yeast and enough hot water to make into a stiff dough, knead well, the more the better. Stand it in a warm place all night, and in the morning make it up into loaves, let it stand until risen and bake. It rises quicker if covered with a blanket. This quantity makes three good sized loaves, if less required take half the quantity. I always put sugar in the flour when making.

By Another Farmer's Wife.

Yeast.—Put two handfuls of hops into three pints of cold water, boil gently for half an hour, strain, add to the liquid one and a half tablespoonfuls of sugar, and one dessertspoonful of salt, then take one and a quarter lbs. of flour, mix into a thick paste with cold water, then add the liquid, stir well to the thickness of gruel, when luke warm add a little old yeast, mix all together, put into a jug or jar, covered with a piece of muslin, and let it stand twenty four hours, then stir it up, and put into bottles and cork tightly.

To make white bread.—Make a sponge at night as follows:—Take six medium sized potatoes, boil and mash as smooth as possible, place in the bread pan, and add three pints of warm water, or milk, one tablespoonful of

salt, one half cupful of yeast, and enough flour to make a stiff batter, stir hard for eight or ten minutes, and set in a warm place over night; in the morning the sponge should be very light, mix as soon as possible, adding flour enough to prevent it sticking to the pan, knead thoroughly and let rise again, then mould into loaves, and place in the baking pans, let it rise again till twice the size, and put in a moderately hot oven to bake about one hour for small loaves, and one and a half hours for larger.

By "Old Rhodesian."

To about one gallon of boiling water add 2 oz. hops, half a pint sugar, and boil for about ten to fifteen minutes, let stand till cool, then mix two tablespoonfuls flour in cold water, add this and stir, then strain the whole and bottle, tie the corks down. The yeast will be ready for use on the third day. When making a fresh lot, put a bottle of old yeast in before straining, the yeast is usually fit for use on the following day. Hops can be bought in half pound or pound packets at most stores.

To make bread.—Half a whisky bottle of yeast (if good) is enough for from six to eight pounds of flour. Put the quantity of flour required in basin, making a hole in the centre, into this pour yeast, add sufficient warm water and salt, mix, but do not have the mixture too stiff, cover up, and keep in a warm place until the morning, then add sufficient flour to make the batch of proper stiffness, punch it well. If baked in tins, put in about a third of a tin, allow it to rise level, then bake in a hot oven for an hour.

If a woman is baking she will find that by allowing the batch to rise in the basin after the morning mixture, then mixing again slightly and placing in tins and allowing to rise, bread will be much better. It is rather a long business, and the batch must always be kept warm. A blanket put round the basin and placed near a fire or in the sun, is as good as anything.

(NOTE.—The Acting Editor is much indebted to the contributors of these receipts for bread-making for the trouble they have taken.)

Garden Calendar.

By N. L. KAYS-EDDIE.

THE FLOWER GARDEN.

JULY.—The cold weather disappears with this month. All plants must be carefully attended to and kept free of dead and dying wood. The soil should be well dug and manured, kept constantly stirred and as loose as possible. Where watering has to be resorted to, particular care must be taken not to allow the soil to cake. Seeds of most annuals if desired for early flowering may be sown in boxes, but these will require continual watering before the coming of the rainy season. The boxes should be placed in a warm place, sheltered from the wind; a good plan is to make a pit and cover the top with calico. Perennials, shrub and ornamental tree seeds may also be sown. Dahlia, canna and other Summer flowering bulbs, if not already done should be dug up and stored for division and re-planting while the soil is being prepared. Pruning of roses and shrubs should be completed this month, and cuttings planted.

AUGUST.—This is a busy month, and the soil should be kept in good tilth. Roses, shrubs and ornamental trees may be planted. All seeds may now be sown. Marguerite Carnations sown now will flower by the end of the year. Cutting of carnations and other perennials should be planted either in the open ground or in boxes, using poor but loose soil for the latter, taking care that they are well drained, or the success will be small.

Carnations.—No garden should be without this very popular and beautiful flower, which, especially the Marguerite varieties, flourish well in Rhodesia, the latter will with attention flower throughout the year. They are easily raised from seed or cuttings and grow in almost any situation. Constant picking not allowing seed to form adds to its life and vigour.

Dahlias.—The bulbs should be broken up and re-planted. Care should be exercised in this operation which is a difficult one. Each bulb to grow must have an eye which is situated on the crown of the old stem, part of which must be cut away with each bulb, and the thin neck of the bulb should in no way be damaged. The

Dahlia requires only a poor but deep soil and should never be heavily manured or the plant will run to wood. The Cactus varieties do exceedingly well in this country.

All plants in tins or pots requiring repotting should now be attended to. A good compost can be made of sand, ordinary garden soil and leaf mould in equal parts. Rotten chips from underneath the wood stack will do instead of leaf mould.

THE KITCHEN GARDEN.

JULY.—The garden should by this be well trenched and manured, the soil being well worked and loose.

Beet, radish, carrot, parsnip, turnip, onion, leek, mustard, cress and tomatoes may be planted.

Potatoes may be planted by those being fortunate enough to have sufficient water.

AUGUST.—All vegetable seeds may now be planted. Those having but a limited supply of water would be wise to sow in boxes transplanting when large enough. The seed beds require careful preparation, they should be well raked up and laid out in long narrow rows in order to facilitate watering. The tops of the beds should be levelled as near as possible and when sown covered over with a thin layer of straw or grass which will prevent the seeds being washed out when watering and the soil from caking.

Market Reports.

London market reports indicate a good supply of Maize from The Plate River, America, and Odessa. South African, White Choice, Maize has sold at 27s. per 480 lbs.

Natal has started taking orders for home markets. During last year over 28,000 tons of Maize were shipped from there to England and the Continent.

West African Maize has found very good prices but there is not a very large business done.

South African Oats have sold to some small extent on the home markets but the prices are said to be too high to compare favourably with the Argentine and home grown oats.

Grain crops are reported good in Russia, The Plate River and America, and markets are likely to be well supplied this year. During April wheat has advanced considerably, and this has had a steadying effect on oats and maize. Hay is selling at from 63s. to 79s. per ton.

Salisbury Market prices of produce supplied by Messrs. Wightman and Co., Ltd.:—

Mealies, per bag of 203 lbs.	12/- to 13/-	Potatoes, per lb. ...	1½d. to 2d.
Rapoko, „	13/- „ 15/-	Onions, per lb. ...	2½d. „ 3d.
Oats, „	28/6 „ 30/-	Manna, per bale ...	6/- „ 7/-
Oat Forage, per bale ...	9/- „ 10/-	Beans, per bag ...	28/6 „ 30/-
Munga, per bag of 203 lbs.	16/- „ 17/-	Ground Nuts, per bag ...	9/- „ 10/6

Salisbury Market prices of Stock supplied by Messrs. Whitfield and Co.:—

Owing to the closing down of roads prices of cattle have dropped considerably.

Native Cows, each ...	£7	Mules, each ...	£25
Native Heifers „ ...	£6	Horses „ ...	£25 to £30
Slaughter Oxen, per 100 lbs. ...	40/-	Donkeys „ ...	£7 „ £9
„ Sheep (Colonial), each ...	27/-		

James Lawrence and Co., Kimberley:—

Bran, per bag 100 lbs. ...	7/9 to 8/3	Boer Meal (Col.) sifted	
Barley, „ 163 „ ...	8/6 „ 12/-	mixed ...	30/6 to 32/6
Beans, Sugar, bag 203 lbs.	32/6 „ 37/6	Flour (Col.) per bag 100 lbs.	16/9 „ 17/6
Beans, Kafir, 203 lbs. ...	none.	Yellow Mealies (Col.) 203 lbs.	9/- „ 10
Chaff (Colonial) bale ...	4/6 to 9/6	White Mealies (Col.) hard	
Chaff „ pressed, 100		203 lbs. ...	9/- „ 10/-
lbs. „ ...	3/- „ 4/-	White Mealie Meal, 183	
Forage, per 100 lbs. (good)	5/6 „ 5/9	lbs. ...	10/6 „ 13/6
Forage, „ „ (inferior)	4/6 „ 5/-	Oats, per bag 150 lbs. ...	9/6 „ 10/6
Kafir Corn, S.A. mixed ...	9/- „ 10/-	Lucerne Hay, per 100 lbs.	4/6 „ 5/3
Kafir Corn, White ...	9/- „ 10/-	Onions, per bag 120 lbs. ...	9/6 „ 12/6
Boer Meal (Col.) unsifted		Potatoes, per bag 163 lbs.	8/- „ 12/-
mixed ...	28/- „ 28/6	Potatoes (local) ...	10/- „ 13/6

Hubert Morisse and Co., Johannesburg:—

WEEKLY MARKET PRICES.

Barley, per 163 lbs. ...	8/- to 12/6	Hay, Sweet (Transvaal)	9d. to 1/-
Bran, 100 lbs. (Col.) ...	8/9 „ 9/-	Lucerne, per 100 lbs. ...	5/6 „ 7/-
Chaff, best, 100 lbs. ...	2/9 „ 4/3	Manna ...	3/- „ 4/3
Eggs, per doz. (Col.) ...	1/6 „ 1/9	Transvaal Hay ...	8d. „ 1/-
Salt, per bag ...	4/9 „ 5/6	Oats, per 153 lbs. ...	5/6 „ 12/6
Forage (Transvaal) ...	6/9 „ 7/6	Potatoes, best, per 153 lbs.	15/- „ 18/6
„ (Col.), best, per		„ medium and inferior	10/6 „ 14/6
100 lbs. ...	6/9 „ 7/6	Onions (Cape) 120 lbs. ...	9/- „ 12/-
Forage, med. and inferior,		Turkeys (Cocks) ...	3/6 „ 11/6
per 100 lbs. ...	3/- „ 6/-	„ (Hens) ...	2/10 „ 3/6
S. Meal, best fine ...	28/6 „ 30/-	Fowls ...	1/3 „ 3/6
Rye ...	15/9 „ 16/6	Ducks ...	1/9 „ 2/9
Wheat ...	17/6 „ 22/-	Geese ...	4/6 „ 5/3
Mealies (Hickory King		Pigeons ...	11d. „ 1/1
Whites) ...	10/4 „ 10/9	Butter (O.R.C.) ...	9d. „ 1/2
Mealies (O.R.C. Whites)	10/- „ 10/3	Pumpkins, each ...	1d. „ 6d
„ (Yellow) ...	10/2 „ 10/7	Beans, per 200 lbs. (Sound)	15/6 „ 40
Kafir Corn, per 203 lbs. ...	9/- „ 11/-		

SOUTH AFRICAN STUD BOOK.

A RECORD of all classes of Stock, the object being to encourage the breeding of Thoroughbred Stock and to maintain the purity of breeds, thus enhancing their value to the individual owner and to the country generally.

Applications for Membership and entries of Stock should be addressed :

For Cape Colony to—

A. A. PERSSE, P.O. Box 703, CAPE TOWN.

For Transvaal to—

F. T. NICHOLSON, P.O. Box 134, PRETORIA.

For Orange River Colony—

E. J. MACMILLAN, GOVERNMENT BUILDINGS,
BLOEMFONTEIN.

A. A. PERSSE,

Secretary South African

Stud Book Association.

Government Notices.

No. 188 of 1906.

26th July, 1906.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the regulations promulgated by Government Notices Nos. 264 of 1905 and 164 of 1906 and declare the following to be of full force and effect in lieu thereof within the Province of Matabeleland, exclusive of the District of Gwelo as described and defined by section 4 (c) of the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which area is hereby declared to be an area infected with a destructive disease and is hereinafter called the said area.

1. No cattle shall be moved from any other part of the Territory of Southern Rhodesia into the said area.

2. The movement of cattle to, from or across any defined area appearing in the schedule hereto or any area which may hereafter be added to that schedule so long as such area remains in and is not withdrawn from the schedule is absolutely prohibited save and except as is provided for in sections 3, 6 and 7 of these regulations.

3. The movement of all cattle within the said area is prohibited save and except

- (a) On permission granted by an Officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within an area of land enclosed by a substantial fence.
- (d) Within a radius of four miles of any native kraal situate within the boundaries of any Native Location or Reserve, and as is hereinafter further provided.

4. The movement of cattle for slaughter, *bona fide* farming, mining or breeding purposes or for private milk supplies shall be permitted under the written authority of an official thereto duly authorised subject to the following terms and conditions:

- (a) That cattle are moved to the nearest or most suitable railway station or siding, and thence by rail to their destination, or, where the district is not served by a railway by the most suitable route to their destination, all cattle travelling by road shall be under the personal supervision of a responsible white man approved of by the Cattle Inspector or of a native approved of by the Native Commissioner and the Cattle Inspector of the district within which the movement takes place.
- (b) That written permission of owners, occupiers or managers of all occupied land, and in the case of Native Reserves, of the Native Commissioner of the District over which such cattle shall pass to the nearest station, siding or destination is obtained; provided that in the event of such owners, occupiers, managers or Native Commissioner refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (c) That such cattle shall before being moved, be thoroughly disinfected by dipping or by spraying to the satisfaction of the Officer issuing permit, and at the expense of the owner of such stock, and if intended for slaughter shall where possible be branded under the supervision of the Officer issuing permit with the letters "V.D." on the near side of neck.

- (d) That cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (e) hereof, be immediately taken to the prescribed quarantined area and there be quarantined and confined, and where not branded in terms of clause (c) hereof, be similarly branded under the supervision of a duly authorised officer.
- (e) That all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying in terms of clause (c) hereof shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area.
- (f) That all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of their admission, and under no pretext whatever shall cattle so admitted be permitted to leave the said area alive; all such cattle shall after admission to the said area be considered as likely to be infected with disease and if found wandering outside the said area or in possession of any person may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (g) That on arrival at destination cattle other than slaughter cattle shall be dipped or sprayed and shall be effectually isolated from all other cattle on the same land for a period of four weeks.

5. The movement of working cattle may be permitted under the following conditions only:—

- (a) Within a radius of six miles of any working mine or mine in course of development for the purposes of such mine, provided that such cattle shall only be moved under a permit of a duly authorised officer, and shall be dipped every fourteen days or where no dipping tank is available be thoroughly sprayed with an approved dip, provided further that such permission shall not be granted when it conflicts with any other section of these regulations, or if such movement is considered dangerous to other cattle within the six mile radius.

Sub-section (b) cancelled by Government Notice No. 216 of 1907.

6. In the event of the failure of pasturage or water on land on which cattle are located, the movement of such cattle will be permitted, provided:—

- (a) That such movement shall be to nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 4 (b) hereof.
- (c) That movement shall be by permit only of a duly authorised officer, and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector and Native Commissioner of the district.

7. For the purposes of cleansing an area from disease the Controller of Stock may, on the authority of the Administrator and on the advice of the Chief Inspector of Cattle, and subject to such conditions as may be stipulated, permit the removal of cattle from a scheduled area to an adjacent clean area.

8. All applications for the removal of cattle under sections 4 and 5 hereof shall be submitted to and approved of by the Veterinary Department before being granted and when such movement is from one Native District to another the application shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Native Commissioners of the Districts to and from which the removal is made.

Section 9 cancelled by Government Notice No. 114 of 1908.

10. All veld-fed animals within the limits of the various Commonages or Townlands or other centres where there is common grazing ground, and wherein cases of African Coast Fever have occurred within two years of the date of publication hereof, and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days: provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

11. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations in respect of any dipping done at a public dipping tank :—

For cattle (over six months)	..	..	..	3d. per head.
For horses and mules	..	..	..	3d. „
For calves (six months and under)	..	..	..	2d. „
For small stock	..	..	..	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under above tariff.

12. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed ; provided that the Inspector may, at his discretion, carry out such disinfection with the assistance of and at the entire cost of the owners of the animals to be sprayed, the cost of such disinfection being payable at the time of the spraying.

13. Whenever the owner, occupier, or manager of a farm shall adopt measures for the cleansing of his cattle running thereon, either by spraying or dipping or by any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the said farm to cleanse such cattle, and the Native Commissioner of the District in which such farm is situated may enter into an arrangement with the native owners of cattle to cleanse such cattle at a charge to be mutually agreed between the said owner, occupier, or manager and the said native owners.

14. Any person contravening any of the provisions of these regulations shall, upon conviction, be liable in respect of each offence to the fines and punishments prescribed by the Ordinance, and in cases where no special punishment is provided, to a fine not exceeding £20, or in default of payment to imprisonment with or without hard labour for any period not exceeding three months, unless the penalty be sooner paid.

SCHEDULE.

- (1) Fingo Location.
- (2) An area within a radius of ten miles of Ntolas Kraal on the farm Emangeni.
- (3) An area comprising the farms Upper and Lower Umvutcha, Reigate, Upper Nondwene, Mapane, Government Farm No. 5, Trenance and the plots adjoining the farms Umvutcha.

No. 216 of 1907.

Department of Agriculture,

Administrator's Office,

Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the " Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw Sub-section (b), Section 5 of Government Notice No. 188 of 1906, and declare the following to be of full force and effect in lieu thereof :—

Within the said area from private farms and trading stations to any centre of consumption, or to a railway station or siding, or to and from any other farm, or from a mine to a railway station or siding for the purpose of transporting fuel or mining timber, under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of the owners, occupiers, or managers of occupied lands proposed to

be traversed, and, in the case of native reserves, of the Native Commissioners, and that such cattle shall before being moved be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit; provided further that, in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 217 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw as from the 1st October, 1907, the regulations promulgated by Government Notices No. 189 of 1906 and No. 185 of 1907, and declare that the following shall be of full force and effect in lieu thereof from that date within the province of Mashonaland and the fiscal division of Gwelo, as defined by the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which areas are hereby declared to be areas infected with a destructive disease:—

1. The movement of all cattle within the said area is prohibited save and except:—

- (a) On permission granted by an officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within any area of land enclosed by a substantial fence.
- (d) Within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp.
- (e) Within a radius of four miles of any native kraal situate within the boundaries of any native location or reserve, the site of such kraal shall be deemed to be the place where it is situated at the date of publication hereof, and as is further provided.

2. The movement of cattle for slaughter purposes shall be permitted under the written authority of an officer thereto duly authorised, subject to the following terms and conditions:—

- (a) That such cattle are moved by the most suitable route to the centre of consumption. All cattle travelling by road to be under the personal supervision of a responsible white man, or native approved of by the Cattle Inspector.
- (b) That before cattle may enter from a native district not included in any particular group of districts as defined in Section 6 (b) the written permission of owners, occupiers, or managers of all occupied land, and, in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass to the nearest station, siding, or centre of consumption is obtained; provided that in the event of such owners, occupiers, managers, or Native Commissioners refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal if satisfied that the necessary permission is withheld without good and sufficient cause.

- (c) That such cattle shall, on arrival at the centre of consumption, subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area, and there be quarantined and confined, and branded with the letters "V.D." on the near side of the neck under the supervision of a duly authorised officer.
- (d) That all cattle brought into any centre of consumption shall be disinfected by dipping or spraying at the public dipping station before being taken to the quarantine area.
- (e) That all cattle admitted to the quarantine area shall be slaughtered within 21 days of their admission, and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter. All such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and, if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (f) That intermediate depots, or concentration camps, for slaughter stock may be allowed at centres approved of by the Chief Inspector of Cattle, provided that no such camp shall be situated within less than a radius of five miles of any commonage, town lands, or grazing ground common to any mining camp, railway station or siding.

3. The movement of cattle required for *bona fide* mining, farming, breeding and dairying purposes and for private milk supplies may be permitted on the written authority of a duly authorised officer, subject to the following terms and conditions :—

- (a) That such movement shall take place subject to the conditions set forth in Section 2 (a) and (b).
- (b) That whenever such cattle shall at any place along the route have passed within a radius of less than five miles of an infected area, the cattle shall upon arrival at their destination be effectually isolated from all other cattle on the same land for a period of four weeks.
- (c) That whenever the cattle being removed shall at any portion of the route have passed within native districts where infected areas exist, the consent in writing to such movement be obtained from all owners of cattle on farms adjoining that to which movement takes place ; and in the case of native reserves of the Native Commissioners of the districts ; provided that should such consent be unreasonably withheld by any of the aforesaid persons the Controller of Stock may direct the issue of a permit.
- (d) That such cattle required for breeding and dairying purposes, or for private milk supplies, when moved to within the boundaries of the various commonages, town lands, or of grazing ground common to any mining camp or other centre where cases of African Coast Fever have occurred within 15 months, shall be confined in some enclosed place approved of by the local Cattle Inspector, and, if a case of African Coast Fever occur in such enclosure, shall not be liberated therefrom except in terms of Section 5 hereof, until 15 months after the last occurrence of African Coast Fever within the enclosure in which they are kept, nor shall they be allowed, after liberation, to run upon any of the land specified herein, unless such land has been free from African Coast Fever for a period of 15 months.
- (e) All cattle introduced in terms of the preceding sub-section (d) shall, on arrival, be taken direct to the Government dipping station and there be dipped or sprayed.
- (f) All cattle confined in terms of clause (d), and all calves born within the said enclosures, shall be sprayed every 14 days, as may be directed by the Cattle Inspector.
- (g) No cattle shall be moved from one native district to another unless with the permission of the local Veterinary Officer and the Cattle Inspectors of the districts to and from which such movement takes place.

4. All calves having less than two permanent teeth running within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp or other centres where cases of African Coast Fever have occurred within 15 months of the date of these Regulations, or born thereon after such date, shall be removed to some enclosed place approved of by the local Cattle Inspector, and shall not be liberated or allowed to run at large on such commonage, town lands or common grazing ground until 15 months after the occurrence of the last case of African Coast Fever within the enclosure in which they are confined, or upon such commonage, town lands or common grazing ground.

- (a) No calves shall be permitted to accompany working cattle travelling along the roads mentioned in Section 7, sub-section (c), and all calves born of such working cattle whilst travelling shall not be removed from the place where born.

5. For the purpose of cleansing an area of disease the Controller of Stock may, under the authority of the Administrator and on the advice of the Chief Inspector of Cattle, subject to such conditions as may be stipulated, permit the removal of calves and other cattle to an adjacent clean area.

6. The movement of working cattle other than those specified in Section 7 hereof may be permitted within the following areas and on the terms and conditions hereinafter set forth :—

- (a) Within a maximum radius of 15 miles of any working mine, or mine in course of development, for the purposes of such mine, provided that :—

- (1) Such cattle shall only be moved under permission of a duly authorised Officer, and shall be dipped every 14 days where a dipping tank is available within such area, or, in the absence of a dipping tank, be thoroughly sprayed with an insecticide.
- (2) Such permission shall not be granted where it conflicts with any other section of these regulations, or if such movement is considered to be dangerous to other cattle within the 15 mile radius.

- (b) Within the boundaries of the Gwelo and Lomagundi Native Districts, and within and between the boundaries of the following adjoining Native Districts : (1) Salisbury, North and South Mazoe ; (2) Hartley, Charter and Chilimanzi ; (3) M'tokos, M'rewas, Marandellas and Makoni ; (4) Inyanga, Makoni and Umtali (as defined by Government Notice No. 13 of 1899) ; (5) Along the road West of the Sabi River from Odzi Bridge to Makondo Copper Mine, subject to the following conditions :

- (1) That the movement will be permitted for such period as the Controller of Stock may in his discretion, and on the advice of the Chief Inspector of Cattle, deem expedient, provided that such permission may at any time be withheld or withdrawn without notice.
- (2) That all applications for removal shall be approved of by the Cattle Inspectors of the districts through which the cattle pass.
- (3) Provided that in the event of such Cattle Inspectors refusing to grant permits for the removal of cattle, the Chief Inspector may, on the advice of the local Veterinary Officer, direct the issue, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (4) That all such cattle are dipped every 14 days where a tank is available, or, in the absence of a tank, are thoroughly disinfected by spraying.

7. The movement of " salted " or immune working cattle shall be permitted on the following terms and conditions :—

- (a) That such cattle have been registered and branded under the supervision of the Cattle Inspector with the brand " T.O. " on near shoulder and the registration number on near horn, in terms of Section 7, clauses (a) and (b) of Government Notice No. 109 of 1905.

(b) That the movement of such cattle shall only take place under the written permit of a duly authorised officer and subject to the conditions that they are disinfected by dipping every 14 days, where a dipping tank is available, or, in the absence of a dipping tank, by thorough spraying with an insecticide.

(c) That movement of such cattle only shall be permitted :—

- (1) Along the main roads of the Melsetter District.
- (2) From Umtali to the Makondo Copper Fields.
- (3) From Melsetter to Umtali.

8. In the event of failure of pasturage or water on land on which cattle are located the movement of such cattle will be permitted, provided :

- (a) That such movement shall be to the nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 2, clause (b) hereof.
- (c) That such movement shall be by permit only of a duly authorised officer and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector of the district.

9. All applications for the removal of cattle under Sections 2, 3 and 8 hereof shall be submitted to, and approved of by, the local Veterinary Officer before being granted.

10. All permits granted under the provisions of these Regulations shall specify the number and brands of cattle, route to be travelled and period allowed, and may define places of outspan, and all other conditions endorsed on such permits by the officer issuing the same shall be strictly observed.

11. All veldt-fed animals within the limits of the various commonages or town lands, or other centre where there is common grazing ground within the districts of Umtali and Melsetter and the scheduled area at Selukwe, upon which public dipping tanks have been established, shall be dipped therein at least once every 14 days ; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

12. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these regulations in respect of any dipping done at a public dipping tank :—

For Horned Cattle (six months old and over)	..	3d. per head.
For Horses and Mules	.. .. .	3d. „
For Calves (under six months) and Donkeys	..	2d. „
For Small Stock	.. .. .	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under the above tariff.

13. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed : provided that the Inspector may at his discretion carry out such disinfection with the assistance of and at the entire cost of the owner of the animals sprayed, the cost of such disinfecting being payable at the time of spraying.

14. Whenever the owner, occupier, or manager of a farm shall adopt means for cleansing his cattle running thereon, either by spraying or dipping or any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the same farm to cleanse such cattle or any others before permitting them to enter or pass over such an area, and the Native Commissioner of the district in which such farm is situated may enter into an arrangement with the native owners of cattle, to cleanse such cattle at a charge to be mutually agreed upon between the said owner, occupier or manager and the said native owners.

15. Any person contravening the provisions of these regulations shall be liable to the punishments prescribed by the Ordinance, and in cases where no special punishment is prescribed by the said Ordinance to a fine not exceeding £20, or to a period not exceeding three months' imprisonment with or without hard labour in default of payment of any fine inflicted.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 66 of 1907.

Department of Agriculture,
Administrator's Office,
Salisbury, 28th March, 1907.

AFRICAN COAST FEVER.

NOTWITHSTANDING anything to the contrary by regulation provided, I, under and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," hereby provide as follows:—

No cattle shall be allowed to be at large, or moved about for the purposes of work, or other cause, within the area defined hereunder, unless an Inspector shall be satisfied that the said cattle are immune from the disease known as African Coast Fever, and shall have caused such cattle to be branded with the letters "T O" on the near shoulder.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNNE,
Acting Treasurer.

AREA.

From a point on the Tebekwe River one and a half miles North East of the Wanderer Mine in a straight line to the Wanderer Dam, thence in a straight line to the Sebanga Poort, thence along the top of the Eastern slope of the Poort Hills to a point half a mile west of the Paf Mine, thence to the Lundi River in a straight line, thence in a straight line East to the Victoria Road Drift on the Tebekwe River, and thence up the River to the first named point, situate in the Native District of Selukwe.

No. 114 of 1908.

Department of Agriculture,
Administrator's Office,
Salisbury, 16th April, 1908.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw section 9 of Government Notice No. 217 of 1907, and declare the following to be of full force and effect in lieu thereof:—

Notwithstanding anything to the contrary elsewhere provided, all applications for the removal of cattle under sections 2, 6 and 8 of the Regulations published under Government Notice No. 217 of 1907 shall be submitted to, and approved of, by the local Government Veterinary Surgeon or Cattle Inspector before being granted, except in the native districts of Lomagundi, North and South Mazoe, Mrewas, Marondellas,

Makoni, Inyanga, Salisbury, Hartley, Charter, and Chilimanzi, within which districts officers duly authorised to issue permits may authorise such removal without submitting the aforesaid applications to, and obtaining the approval of, the local Veterinary Officer.

W. H. MILTON,

Administrator

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer

Provisions extended to Native District of M'danga by Government Notice No. 170 of 1908.

No. 123 of 1908.

Administrator's Office,

Salisbury, 23rd April, 1908.

BRANDS.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby provide as follows :—

1. For the purposes of the more effectual control and supervision of cattle in any infected area the Controller of Stock may direct the branding of any such cattle with a special brand by him selected.

2. Any person who shall refuse or neglect to afford all reasonable facilities for branding cattle as aforesaid shall be liable to a fine not exceeding twenty pounds, and in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council,

F. J. NEWTON,

Treasurer.

No. 295 of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 1st October, 1908

IMPORTATION OF STOCK.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 8, of the 19th day of January, 1905, and so much of any other regulations as may be repugnant to or inconsistent with the subjoined regulations, which are hereby declared to be of full force and effect.

1. The importation of the following animals from the respective countries enumerated is prohibited, owing to the existence or supposed existence of destructive diseases affecting the said animals in the said countries :—

(1) All animals from the island of Mauritius.

(2) All animals from German South-West Africa, and all animals except donkeys from German East Africa

- (3) Pigs from the colonies of the Cape of Good Hope, Transvaal, and the Orange River Colony, the Bechuanaland Protectorate, the Tati Concession, and other countries in which swine fever exists, subject, however, to the exceptions contained in the proviso to this section.
- (4) Dogs from the territories of North-Eastern and North-Western Rhodesia and Portuguese East Africa; provided, however, that dogs from countries from which importation is permitted may be introduced through the port of Beira and brought direct into this Territory.
- (5) Sheep and goats from (a) the districts of Albany, Alexandria, Bathurst, Bedford, East London, Fort Beaufort, Humansdorp, Jansenville, Kingwilliamstown, Komgha, Peddie, Somerset East, Stockenström, Uitenhage, and Victoria East, in the Cape Colony; (b) the districts of Barberton, Lydenburg, Marico, Pretoria, Rustenburg, Waterburg, and Zoutpansberg, in the Transvaal; (c) Swaziland; (d) Portuguese Territory; (e) places north of the Zambesi River.

Provided, however, that the Controller of Stock may at his discretion permit the importation of pigs under six months of age for breeding purposes from the places mentioned in sub-section (3), and sheep and goats from the places mentioned in sub-section (5) hereof, on production of a certificate of a duly authorised Government veterinary officer that such animals are free from disease, have not been in contact with diseased animals, and have not come from an area where destructive disease has existed for twelve months previously.

2 The importation of organic manures, except guano, is strictly prohibited, and the importation of bone meal and bones required for fertilising or feeding purposes will only be permitted when accompanied by the certificate of a responsible and competent person that they have been thoroughly disinfected by treatment by superheated steam or other approved method. Any such manures, bone meal or bones introduced into Southern Rhodesia contrary to this regulation shall be liable to immediate destruction.

3. The areas set out in Schedule "A," and such further areas as may be added to the said schedule, shall be used in connection with pasture lands of the places to which they relate for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever.

4. The appointment of the areas set out in Schedule "B" hereto for the depasturing and quarantining of animals for slaughter in connection with the places therein mentioned is confirmed.

5. The several districts of Southern Rhodesia are hereby declared to be an area infected with scab amongst sheep and goats and the movement of all sheep and goats from any farm to beyond the limits thereof, or from their usual grazing ground within the limits of any town lands or native reserves to any other place, is prohibited, except under the written permit of an Inspector or Sub-Inspector. Such permit shall set forth the number and description of animals to be moved, the route they shall travel and the period for which the permit shall be in force. In cases where it may appear necessary or desirable the person to whom any such permit is issued may be required to cause the animals referred to therein to be dipped before being moved.

6. The introduction of sheep and goats against which no prohibition exists may be permitted by rail, subject to the following provisions:—

- (1) Plumtree shall be regarded as the port of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto; provided, however, the Controller of Stock may allow the introduction of well-bred sheep or goats intended for sale or stud purposes without being previously dipped.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival; provided, however, that animals intended for immediate slaughter shall be exempt from dipping if marked with a distinctive brand on the back.

7. The introduction of sheep and goats against which no prohibition exists may be permitted by road, subject to the following provisions :—

- (1) M'Lala Drift and Fort Tuli shall be regarded as ports of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival.

8. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by rail shall immediately report such arrival to the Veterinary Office at Salisbury, Bulawayo and Umtali respectively, and no such animal shall be detained at any intermediate station without the written authority of a Government Veterinary Surgeon.

9. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by road shall immediately report such arrival at the police camp nearest to the place where such entry is made, and the officer in charge of such police camp shall immediately report to the Veterinary Department, which shall direct what steps are to be taken to test such animals with mallein, as in the following clause provided.

10. All horses, mules and donkeys upon entering Southern Rhodesia shall be tested with mallein, and the owner or person in charge of such animals shall, in all respects, carry out the lawful directions of the Inspector while such animals are being tested ; provided that this regulation shall not apply to animals in transit by railway through Southern Rhodesia and which are not detained *en route*.

11. The Inspector may direct the detention of any animal, and its isolation for the purposes of such examinations and tests as may be deemed expedient during which period of isolation or detention it shall be maintained and tended at the expense of the owner. If in the case of any such animal a second injection of mallein, applied at an interval of not less than ten days, is followed by a reaction indicative of the existence of glanders, such animal shall be forthwith destroyed.

12. Horses, mules and donkeys lawfully in this Territory, and required for purposes necessitating frequent crossing of the border to and from Portuguese East Africa, may be allowed so to cross on such terms as to registration, branding, testing and other conditions as the Chief Veterinary Surgeon may from time to time deem expedient to prescribe.

13. All horses, mules and donkeys depastured on the town lands of Melsetter and Umtali or on any public outspan adjoining such lands, and within the following area known as the Penhalonga, Imbesa and Samba Valleys, as bounded by the Umtali Waterfall Range on the north, the divide following beacons 18, 24 and 27 on the east, the Christmas Pass Range on the south, and the Palmyran Range on the west, in the district of Umtali, shall be dipped every fourteen days, by or at the expense of the owner or person in charge of such animals, unless the local Veterinary Officer shall see fit to dispense with such dipping.

14. An Inspector may direct the thorough cleansing and disinfecting of trucks which may be reasonably suspected of being sources of infection of any destructive disease, and may direct the destruction of *truck fittings*, fodder, excreta or other matter or thing which may be reasonably calculated to convey such infection.

15. Any person contravening the provisions of these regulations, or the instructions or directions given in terms of these regulations, shall be liable in respect of each offence to a penalty not exceeding twenty pounds, or in default of payment to imprisonment with or without hard labour for a period not exceeding three months, unless where more or heavier penalties have by the aforesaid Ordinance, or by other regulations framed thereunder, been expressly provided. †

W. H. MILTON,

Administrator.

By command of His Honour the Administrator

F. J. NEWTON,

Treasurer.

SCHEDULE "A."

Areas on or near pasture land used in connection with townships set apart for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever :—

1. For the township of Salisbury and its neighbourhood, the Government Farm Makabusi, as defined in Government Notice No. 13 of 1898, namely, about six miles from Salisbury on the Old Charter Road, and bounded on the north, north-east and west by the farm "Willowdale," and on the south and south-east by the Makabusi River.

2. For the township of Umtali, a triangular piece of land situate to the north-east of the township, being that portion of the farm "Birkley" which falls in British territory.

3. For the township of Melsetter, a piece of land included within those lines bounding the pasture lands laid out around the township, which are in common with the outspan in the west, Sawerombi on the north, and Westfield on the north-east, bounded further on the south by a line drawn from the common beacon of Westfield and Lindley to the common beacon of Fairfield and outspan.

4. For the township of Enkeldoorn, a piece of land about $2\frac{1}{2}$ miles due west of the township and bounded as follows : From a point about 400 yards above the junction of a stream running south of Enkeldoorn township with streams running west from the Police Camp ; thence along the first stream to the junction aforementioned ; thence along a valley running due south from the said junction to a point about 700 yards distant ; thence in a north-westerly direction to a point on the top of a rise about 1,200 yards distant ; thence in a straight line to the first-mentioned point.

5. For the township of Victoria, a strip of land half-a-mile in width lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills.

6. For the township of Gwelo, a triangular piece of ground within the reserved lands around Gwelo. It is bounded south by the Watershed Block along its boundary running from its joint beacon with Kanuck westwards to another beacon 1,518 Cape roods distant, bounded north-westwards by a line about 1,350 roods in length to the Inoculation Station, and bounded north-eastwards by a line from the first-mentioned beacon to the Inoculation Station, and about 1,400 roods in length. This piece of ground is called the Inoculation Camp.

7. For the township of Bulawayo that portion of the commonage bounded on the west and north by the Bulawayo-Mafeking and Gwelo railway lines, on the east by the road known as "Hillside Avenue," on the south to the limits of the commonage and Hillside, known at "Napier's Lease," approximately 4,750 acres in extent.

SCHEDULE "B."

Areas set apart for depasturing and quarantining of animals for slaughter :—

SALISBURY.—Description of the area.—A piece of land, 400 acres in extent, situated on the Makabusi River, below Maggio's plot, towards the southern boundary of the Salisbury commonage.

BULAWAYO.—Description of the area.—That piece of fenced land situated on the Bulawayo commonage between the railway line, to the south, and the Solusi Road, adjoining and to the south-west of the Government dipping tank, in extent 1,000 acres, more or less.

GWELO.—Description of the area.—Starting from a point where the Ingwenia Road crosses the railway, along this road past the sanitary stables to a point a quarter of a mile west, thence in a line parallel with the railway to the Gwelo River, thence along the river to the commonage beacon No. 11, thence in a straight line to the Shamrock road where it is intersected by the Scout's Spruit, thence along the Shamrock road to where it joins Main Street extension, along this to the railway line, and down this to the starting point.

UMTALI.—Description of the area.—Starting from a point at the south-east corner of the farm “Devonshire” and south-west of “Waterfall,” up the stream to where it is joined by the stream commonly known as Rifle-butt Spruit, and up this spruit to a point 300 feet below Paulington Bridge. Thence almost due north on the west of Penhalonga Road to the sanitary pits and from the sanitary pits to the Cemetery, thence due west to the “Devonshire” line and along this line south to south-west corner beacon of “Waterfall.”

SELUKWE.—Description of the area.—A piece of fenced land, in extent about 300 acres, situated on the farm “Sebanga” and adjacent to the township of Selukwe.

PENHALONGA.—Description of the area.—A piece of land bounded as follows :—To the northward by a line starting from the south-east beacon of the hotel stand to the south-west and south-east beacons of Crawford’s butchery. To the eastward from the south-east beacon of Crawford’s butchery to the northern boundary of the Penhalonga Proprietary Mines’ ground. To the southward along the northern boundary line of the Penhalonga Proprietary Mines’ ground. To the westward from the north-west beacon of the Penhalonga Proprietary Mines’ ground to the south-east beacon of the hotel stand.

VICTORIA.—Description of the area.—A strip of land, half-a-mile in width, lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills

SCHEDULE “C.”

I, ...
residing at
in the district of in the
..... Colony, do solemnly and sincerely
declare that the animals enumerated below are free from any contagious
disease, including scab, and have not been in contact with any infected
animals within six months from date hereof, and that to the best of my
knowledge and belief such animals in travelling to* Station
will not come in contact with any animals amongst which scab or any other
contagious disease has existed during that period; further, that such animals
were thoroughly disinfected by dipping on, and
will enter Southern Rhodesia within ten days of having been dipped.

And I make this solemn declaration conscientiously believing the same to be true.

Declared to at on this..... day
of before me

.....
Resident Magistrate, Government Veterin-
ary Surgeon, Scab Inspector, or Police
Officer of district from which animals are
being sent.

Number and general description of animals being sent

Owner’s Name and Address.

Place in Southern Rhodesia to which animals are being sent

* Station within Colony of origin.

CERTIFICATE ISSUED UNDER PROVISIONS OF SECTION I, GOVERNMENT NOTICE No. 295 OF 1908.

This is to certify that the animals enumerated below are, in my opinion, free from any destructive disease, including scab, and to the best of my knowledge and belief have not been in contact with any infected animals nor come from, or through, a locality where any such disease is known to exist or has existed for twelve months from date hereof.

Date
Place
.....
Signature of Government Veterinary Surgeon
Number and general description of animals..... Pigs, ... Sheep,..
..... Goats.
Place from which animals are to be sent
.....
Owner's Name and Address
.....
Place in Southern Rhodesia to which it is desired to send the animals
.....

No. 110 of 1908.
Department of Agriculture,
Administrator's Office,
Salisbury, 16th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal so much of the Regulations published under Government Notice No. 187, dated the 26th of July, 1906, as relate to the importation of cattle from the Colony of the Cape of Good Hope and the United Kingdom of Great Britain and Ireland, and make the following provisions in lieu thereof :—

1. The importation of cattle may be permitted from the Colony of the Cape of Good Hope and the Orange River Colony on the following terms and conditions :—

- (1) A permit shall be required from the Chief Inspector which may contain such conditions as shall from time to time appear expedient.
- (2) Applications for permission to import shall be in the form "A" attached hereto, and accompanied by a declaration in the annexed form "B."
- (3) The importation of cattle with more than two permanent central incisor teeth shall not be permitted.
- (4) All importations shall be by rail, and for the purposes thereof Bulawayo shall be regarded as the port of entry.
- (5) All cattle imported in terms of these Regulations shall on arrival at Bulawayo, Salisbury, or Umtali be removed to a place of quarantine under the supervision of an Inspector of Cattle, there to be submitted to such examination and tests as the Chief Inspector may direct. If such examination or tests disclose the existence of any destructive disease the cattle shall be immediately destroyed and the carcasses thereof disposed of in such manner as a Government veterinary surgeon may authorise or require. The Chief Inspector may permit of any examination or tests as aforesaid being dispensed with in the case of cattle in transit by rail for any place beyond the boundaries of Southern Rhodesia.
- (6) All expenses or losses incident to quarantine, examination, testing or destruction as aforesaid shall be borne by the owner of the cattle.

2. The importation of cattle from the United Kingdom of Great Britain and Ireland may be permitted under the following terms and conditions :—

(1) Importation shall be through and direct from the coast ports of the Cape Colony, and there shall be a consignment note or other satisfactory evidence that cattle so imported have come direct from Great Britain or Ireland.

(2) The provisions of sub-sections (5) and (6) of section 1 hereof shall apply to importations in terms of this section.

3. No person shall import cattle in terms of these Regulations except for his own use, provided however that permission may be granted to import for others on the applicant disclosing the name of the person or persons for whom he proposes to act.

4. Any person introducing cattle in contravention of these Regulations, or failing to comply with any conditions attached to permits to import, or furnishing applications, declarations, or other necessary documents known to be false in any material particular, or failing to comply with all lawful directions as to quarantine, examination, testing, destruction or disposal of carcasses, shall be liable to a fine not exceeding £20 for each animal in respect of which such offence shall have been committed, and in default of payment to imprisonment with or without hard labour for any period not exceeding six months, unless higher or greater penalties shall have been provided for such offences by the "Animals Diseases Consolidation Ordinance, 1904," provided however that the penalties imposed by these Regulations shall not exempt any cattle from destruction in terms of the aforesaid Ordinance.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

ANNEXURE "A."

APPLICATION FOR CATTLE IMPORTATION PERMIT.

GOVERNMENT NOTICE NO. 110 OF 1908, SECTION 1 (2).

1. Applicant's Name and Address.....
 2. Number and Class of Cattle to be imported.....
 3. Area or Farm and District where Cattle are at present located.....
 4. Area or Farm and District to which Cattle are to be moved.....
- Applicant's Signature.....
- Date
- Application
- Permit No.

ANNEXURE "B."

I, ...residing on the farm
 in
 do solemnly and sincerely declare that the animals enumerated below have
 been in my possession since birth, and that lung sickness, pleuro-pneumonia
 or other contagious or infectious disease has not existed amongst any of my

cattle, nor on my farm, nor among any cattle with which these animals have been in contact within the last four years, and that these animals have never been exposed for sale in any public market or stock fair, nor been in contact with strange cattle, and that to the best of my knowledge and belief such cattle in travelling to.....Station (*i.e.*, Station where cattle are to be trucked) will not come into contact with any animals amongst which lung sickness or any other contagious or infectious disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to be true.

Declared to at.....on this.....
day of....., before me

.....
Resident Magistrate for the district of

.....
Number of Animals, ...Bulls.....Heifers, Breed.....

Seller's Name and Address.....
.....

Purchaser's Name.....

Place in Southern Rhodesia to which animals are being sent.....

No. 60 of 1909.

Department of Agriculture,

Administrator's Office,

Salisbury, 1st April, 1909.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal Government Notice No. 124 of 1908, and do hereby declare and make known that, notwithstanding anything to the contrary elsewhere provided, the importation of cattle for *bona fide* slaughter purposes may be permitted into the Umtali district from the adjoining Portuguese territory, under the following terms and conditions:—

- (1) The importation and disposal of cattle, introduced in terms of these regulations, shall be under the absolute control and direction of the local Veterinary Surgeon or other duly appointed officer, and shall be regulated by the requirements of consumption.
- (2) The importation shall be by rail only, and all cattle shall be detrucked at the slaughter enclosure and immediately confined therein.
- (3) All cattle admitted to the slaughter area shall be immediately branded with the letters "V.D."
- (4) All cattle admitted to the slaughter area shall be slaughtered within ten days of their admission, and under no pretext whatever shall cattle so admitted be permitted to leave the said area alive; all such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (5) No meat shall be removed from the said area without special permission unless it is entirely free from skin and ears.

- (6) The hides of animals slaughtered in the said enclosure shall be immediately immersed in an approved insecticide for a period of not less than twelve hours, and shall not be removed from the said enclosure unless accompanied by a certificate signed by a Veterinary Surgeon that they have been satisfactorily disinfected and dried.
- (7) Any person contravening the provisions of these regulations or the instructions or directions of the local Veterinary Surgeon or other duly authorised official, given in terms of these regulations, shall be liable, in respect of each offence, to a penalty not exceeding £20, or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding three months, unless where more severe or heavier penalties have, by the aforesaid Ordinance, been expressly provided.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 61 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 1st April, 1909.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the areas described in Government Notice No. 295 of 1908, as areas set apart for the depasturing and quarantining of animals for slaughter in the township of Umtali and at Penhalonga, and in lieu thereof substitute the following:—

UMTALI.—*Description of Area.*—A piece of fenced land situated on the old Darlington Farm section of Umtali commonage.

PENHALONGA.—*Description of Area.*—A piece of fenced land situated on plot No. 2, Imbeza Plots.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 87 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 28th April, 1909.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Annexure "B" referred to in sub-section (2) of section 1 of Government Notice No. 110 of 1908, and in place thereof do substitute the following which shall, from

date of publication hereof, be the form required to accompany Annexure "A," also referred to in aforementioned sub-section, viz:—

ANNEXURE "B."

I, ... residing on the farm
..... in
do solemnly and sincerely declare that the animals enumerated below have been in my possession since birth, and that lung-sickness, pleuro-pneumonia or other contagious or infectious disease has not existed amongst any of my cattle, nor on my farm, nor among any cattle with which these animals have been in contact within the last four years, and that these animals have never been exposed for sale in any public market or stock fair nor been in contact with strange cattle, and that to the best of my knowledge and belief such cattle in travelling to.....Station (*i.e.*, Station where cattle are to be trucked) will not come into contact with any animals amongst which lung-sickness or any other contagious or infectious disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to be true.

.....

Declared to at.....on this.....
day of....., before me.....
Resident Magistrate for the district of.....
Number of Animals,.....Bulls.....Heifers, Breed.....
Seller's Name and Address.....
Purchaser's Name.....
Place in Southern Rhodesia to which animals are being sent.....

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council

F. J. NEWTON,
Treasurer.

No. 96 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 13th May, 1909.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animal Diseases Consolidation Ordinance, 1904," I do hereby authorise the importation from the Province of East Friesland, Germany, of cattle required for *bona fide* breeding purposes, provided, however, that such importation shall be subject to the provisions of Government Notice No. 110 of the 16th April, 1908, relating to the importation of cattle from the United Kingdom of Great Britain and Ireland.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 268 of 1907.

Department of Agriculture,
The Treasury,

Salisbury, 26th December, 1907.

REMOVAL OF CATTLE FOR SALE.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The assembly of cattle for purposes of sale by auction or otherwise may be permitted at such places and under such conditions as the Chief Inspector may from time to time prescribe.

2. The movement of cattle into the province of Mashonaland and the fiscal division of Gwelo from other places in Southern Rhodesia may be permitted under such conditions as the Chief Inspector may from time to time prescribe.

3. The granting of permits for the purposes of Sections 1 and 2 hereof and the nature of the conditions to be attached thereto shall be at the absolute discretion of the Chief Inspector.

4. Any person contravening the provisions of these Regulations or the conditions attached to permits issued thereunder shall be liable to a fine not exceeding £20 or in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 356 of 1908.

Department of Agriculture,
Administrator's Office,
November, 1908.

MOVEMENT OF CATTLE INTO MATABELELAND.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1905 and 217 of 1907, I, under and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The movement of cattle from the Province of Mashonaland into the Province of Matabeleland and from the Fiscal Division of Gwelo into other parts of Matabeleland may be permitted under such conditions as the Chief Inspector may from time to time prescribe, provided, however, that such movement shall not be permitted in respect of cattle imported from the country to the North of the Zambesi River until they shall have first remained for a period of at least twelve months in the Province of Mashonaland or the Fiscal Division of Gwelo.

2. The granting of permits for the purposes hereof, and the nature of the conditions to be attached thereto, shall be at the absolute discretion of the Chief Inspector.

3. Any person contravening the provisions of these regulations, or the conditions attached to permits issued thereunder, shall be liable to a fine not exceeding £20, or, in default of payment, to imprisonment with or without hard labour for a period not exceeding three months.

By Command of His Honour the Administrator in Council.

No. 47 of 1909.

Administrator's Office.

Salisbury, 15th March, 1909.

IMPORTATION OF CATTLE FROM NORTH OF THE ZAMBESI.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notices Nos. 152 of 1908 and 318 of 1908.

1. The introduction of cattle *via* Feira is hereby prohibited, save and except such cattle for which permits have been issued prior to date hereof.

2. Slaughter cattle may be imported from North-Western Rhodesia up to and including 14th May, 1909, provided that :—

- (a) the permission of the Chief Inspector of Cattle or of a Government Veterinary Surgeon be first had and obtained ;
- (b) all such cattle shall be conveyed by rail *via* Victoria Falls, which is hereby declared a port of entry for cattle, and be carried to the station or siding nearest to the centre of consumption ;
- (c) on arrival at their destination, such cattle shall be subject to the Regulations controlling the movements and disposal of slaughter cattle.

3. On and after 15th May, 1909, the importation of cattle of all descriptions shall be and is hereby prohibited from all places north of the Zambesi River.

4. Cattle for general purposes may be imported from North-Western Rhodesia from 1st April, 1909, until 14th May, 1909, provided that :—

- (a) the permission of the Chief Inspector be first had and obtained ;
- (b) all cattle imported shall be introduced by rail only and *via* the Victoria Falls, and shall be branded before entry with the letters " N.Z. " on the near shoulder ;
- (c) all cattle shall on entry be taken to a prescribed area to the north of the Gwaai River, where they shall remain in quarantine for such period as may be ordered by the Chief Inspector of Stock, being not less than six weeks from the date of their arrival ;
- (d) no cattle shall be removed from the quarantine area until examined and certified to be free of disease by a Government Veterinary Surgeon ;
- (e) all cattle removed from the quarantine area as aforesaid shall be taken direct to their destination and shall not be moved therefrom for a period of twelve months from the date of arrival thereat.

5. Every application for permission to introduce cattle under section 4 shall be accompanied by a certificate in the form of Annexure "A" attached to this Notice.

6. Any person introducing any cattle from North-Eastern or North-Western Rhodesia in contravention of these Regulations, or submitting any certificate false in any material particular, or refusing or neglecting to submit cattle introduced to proper inspection and tests, or failing to quarantine properly such cattle when introduced, shall be liable to a fine not exceeding £10 for every animal in connection with which the offence complained of is committed, and in default of payment of any fine inflicted, to imprisonment with or without hard labour for any period not exceeding three months, and the cattle in regard to which the complaint has been laid and proved may, under the written direction of the Administrator, be destroyed without compensation.

7. For general information it is notified that steps are being taken to prosecute investigations into the nature of the supposed destructive disease which there is reason to believe exists in East and Central Africa, and that the continuance or withdrawal of the above restrictions is largely dependent upon such decision as may be arrived at. The present step is therefore to be regarded as purely a precautionary one.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

ANNEXURE "A."

I,.....residing on the farm....., in the district of....., in the territory of North-Western Rhodesia, do solemnly and sincerely declare that the animals enumerated below have been in my possession for twelve months, and that I purchased them from....., residing in the district of..... in the territory of North-Western Rhodesia, on the.....day of.....(as facts permit), and that no case of lung-sickness or other contagious disease has existed amongst any of my cattle or on my farm, or other cattle with which they have been in contact, during the past two years, and that, to the best of my knowledge and belief, such cattle, in travelling to Victoria Falls, will not come in contact with any animals amongst which lung-sickness or other contagious disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to be true.

Declared to at.....on this.....day of
.....before me.

.....
Magistrate, District Commissioner, or
J.P., North-Western Rhodesia.
District.....

No. of animals.....bulls.....
cows.....heifers.....
bullocks.....

Breed.....

Seller's name.....

Purchaser's name.....

Place in Southern Rhodesia to which animals are being sent.....

No. 39 of 1909.

Department of Agriculture,

Administrator's Office,

Salisbury, 11th March, 1909.

MOVEMENT OF CATTLE, PROVINCE OF MATABELELAND.

1. UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 188 of 1906 and 216 of 1907, and declare the following to be of full force and effect in lieu thereof within the province of Matabeleland, exclusive of the district of Gwelo, as described and defined by section 4 (c) of the Southern Rhodesia Boundary Regulations Amendment Regulations, 1898, which is hereby declared to be an area infected with a destructive disease, and is hereinafter called the said area.

2. The movement of all cattle within the said area is prohibited save and except

(a) on permission granted by the local Cattle Inspector;

(b) within the boundaries of any single farm where such cattle are depastured;

- (c) within an area of land enclosed by a substantial fence ;
- (d) within a radius of four miles from any native kraal situate within the boundaries of any native location or reserve, and as hereinafter further provided.

3. The movement of cattle for slaughter, grazing, *bona fide* farming, mining or breeding purposes, or for private milk supplies, shall be permitted under the written authority of an official thereto duly authorised, subject to the following terms and conditions :—

- (a) that the written permission of owners, occupiers, or managers of all occupied land, and in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass, is first obtained ; provided that in the event of such owners, occupiers, managers or Native Commissioners refusing to grant permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause ;
- b) that such cattle shall, before being moved, be thoroughly disinfected by dipping or spraying, to the satisfaction of the officer issuing the permit, and at the expense of the owner of such stock, and, if intended for slaughter, shall where possible be branded, under the supervision of the officer issuing the permit, with the letters " V.D. " on the near side of the neck ;
- (c) that cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area and there be quarantined and confined, and, where not branded in terms of clause (b) hereof, be similarly branded under the supervision of a duly authorised officer ;
- (d) that all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying, in terms of clause (b) hereof, shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area ;
- (e) that all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of the admission and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter ; all such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and if found wandering outside the said area, or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock. 2

4. The movement of working cattle may be permitted under the following conditions only :—

Within the said area from private farms, mines and trading stations to any centre of consumption, or to or from a railway station or siding, or to and from any other farm under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of owners, occupiers or managers of occupied lands proposed to be traversed, and in the case of native reserves, of the Native Commissioners, and that such cattle, before being moved, be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit ; provided, further, that in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit

5. All applications for the removal of cattle from one native district to another shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Cattle Inspector of the district to which the removal is to be made.

6. All permits granted under the provisions of this notice shall specify the number and brands of cattle, route to be traversed, and time allowed for each journey. Any breach of these or other conditions endorsed on the permit by the issuing officer shall be deemed a contravention of these Regulations, in terms of section 9 hereof.

7. All veld-fed animals within the limits of the various commonages or townlands, or other centres where there is a common grazing ground and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this Regulation, for such reasons as he may regard as sufficient.

8. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations, in respect of any dipping done at a public dipping tank :—

For Cattle (over six months)	..	..	3d. per head.
, Horses and Mules	..	..	3d. „
„ Calves (six months and under)	..	..	2d. „
„ Small Stock	..	..	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under tariff.

9. Any disinfecting by spraying required to be done under these Regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed; provided that the Inspector may, at his discretion, carry out such disinfection, with the assistance of and at the entire cost of the owners of the animals sprayed, the cost of such disinfection being payable at the time of the spraying.

10. Any person contravening any of the provisions of these Regulations shall, upon conviction, be liable, in respect of each offence, to the fines and punishments prescribed by the Ordinance; and, in the cases where no special punishment is provided, to a fine not exceeding £20; or, in default of payment, to imprisonment, with or without hard labour, for any period not exceeding three months, unless the penalty be sooner paid.

W. H. MILTON.

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON, |

Treasurer

No. 30 of 1909.

Administrator's Office.

Salisbury, 25th February, 1909.

RABIES.

WHEREAS it has been shown to me that it is expedient to take measures to prevent the spread of rabies in the undermentioned district: Now therefore, under and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby authorise and direct that all dogs in the undermentioned areas, in the native district of Gutu, with the exception of six male dogs at each kraal (to be exempted at the discretion

of the Native Commissioner of the district), shall be destroyed by shooting, poisoning, or other approved methods, and that the carcasses of all dogs so destroyed shall be burnt or buried at a depth of not less than three feet below the surface :—

Within a radius of six miles from Tshitsa's Kraal.

Within a radius of six miles from Mount Rosa (Mr. Swartz's store).

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,

Acting Treasurer.

No. 45 of 1909.

Administrator's Office,

Salisbury, 13th March, 1909.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 42, 156 and 228, of 1907, except as to acts done or penalties incurred at the date of the coming into force of this Notice, and except as to officers appointed under Government Notice No. 286 of 1906, whose appointments shall remain valid for the purposes of this Notice, and declare the following Regulations shall have full force and effect in lieu thereof :—

1. All and several the various native districts of Southern Rhodesia are hereby declared to be areas infected with the disease of rabies.

2. Subject to any penalty a dog owner may have incurred under Government Notice No. 285 of 1906 by not registering his dog before the first day of February, 1907, the owner of any unregistered dog liable to registration may register the same at any time after the said date.

3. On and after the date of this Notice becoming operative the owner of every dog arriving at the age of three months, and the owner of every dog imported into Southern Rhodesia after that date, shall register such dog with an official appointed for that purpose, provided that this provision shall not apply to any municipality, township or similar area in which provision for registration exists and is duly enforced.

4. A registration badge shall be issued for each and every dog registered, and the said badge shall be attached to a proper and sufficient collar to be supplied by the owner, which must be placed and kept on each dog registered.

5. A fee to cover the cost of registration and supply of badge in the amount of sixpence will become demandable and payable on registration of each dog.

6. Any dog found at large after the date of this Notice becoming operative, not having and bearing a registration badge duly issued by an official or the local authority, may be summarily destroyed by any person.

7. Any Magistrate, Police Officer, Native Commissioner, Government Veterinary Surgeon, or other official vested with the performance of functions under the "Animals Diseases Consolidation Ordinance, 1904," may, on it

appearing to him that any dog or other animal is showing symptoms which justify investigation as to whether such dog or animal is suffering from rabies or not, order the proper detention, isolation and control of such dog or animal, either in the hands of the owner or at some other suitable place.

8. Should any dog show symptoms which lead to the suspicion that such dog may be suffering from rabies, the owner thereof shall forthwith notify the fact to the nearest official vested with powers under these Regulations, who shall immediately report the same to the Chief Veterinary Surgeon, and shall either destroy the said dog or isolate and secure it for further observations.

9. On its appearing that any animal is actually suffering from rabies, any of the above-mentioned officials may order the destruction of such animal, or may himself destroy it, and may further take control of or destroy, if deemed necessary, any animal which has been in contact with a rabid animal or an animal suspected of being rabid.

10. The carcases of all animals destroyed on account of their being infected with rabies shall be thoroughly burnt by the person or official destroying them, save that such parts as may be required for scientific investigation may be retained under proper precautions. In any case in which a human being has been bitten by a rabid animal, the head of such animal shall, if possible, be taken and sent to the nearest veterinary official.

11. In the event of any outbreak of rabies occurring, all owners of dogs within fifteen miles of such outbreak, or such other area as may be fixed, shall, on notification by any of the above-mentioned officials, or by Government Notice in the *Gazette*, at once place and keep their dogs in a safe enclosure, or chained up, for a period of not less than six weeks from such notification, or such other period as may be fixed, but may be taken out for exercise if kept on a chain or leash held by the person exercising them.

12. Any dog found at large in a notified area at any time during the prescribed period may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty hereinafter laid down.

13. Any person contravening any of the above Regulations, or failing to carry out any of the provisions thereof, shall be liable, on conviction, to a fine not exceeding £10 for each offence; or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding one month.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 249 of 1908.

The Treasury,
Salisbury, 27th August, 1908.

PROTECTION OF TREES.

IT is hereby notified for public information that any person who shall cut down for use as fuel, or for any other purposes than *bona-fide* farming, mining or manufacturing purposes, or cause to be so cut down the "Wild Westeria" (native name M'Pakwa or M'poea) tree, will be liable to prosecution for contravention of the provisions of the Forest and Herbage Preservation Act 1859, and upon conviction to a fine not exceeding £100, or to imprisonment with or without hard labour for a term not exceeding six months, or to such fine and imprisonment, or to such imprisonment without a fine.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator,

F. J. NEWTON,
Treasurer.

SUMMARY OF "THE GAME LAW CONSOLIDATION ORDINANCE, 1906," AND REGULATIONS ISSUED THEREUNDER.

The Ordinance divides the game into three distinct classes, described as follows:—

- (a) Birds and Small Buck.
- (b) Bushbuck, Hartebeest, Impala, Lechwe, Pookoo, Roan and Sable-Antelope, Sitatunga, Tasessibe, Waterbuck and Wildebeest.
- (c) Royal Game, which includes Eland, Elephant, Giraffe, Gemsbok, Hippopotamus, Inyala, Koodoo, Ostrich, Rhinoceros, Springbuck and Zebra.

The shooting season for Class "A" is as follows:—

In Mashonaland:

Birds from 1st May to 30th September.

Small Buck from 1st May to 31st October.

In Matabeleland:

Birds and Small Buck from 1st May to 31st October.

To shoot in Class "A" a licence costing £1 per annum is required. This entitles holders to hunt in both Provinces during the open season.

Class "B."—The season opens on 1st July and closes on 30th November in both Provinces. The licence fee is £25 for non-residents and £5 for persons having their domicile in Southern Rhodesia. This licence entitles the holder to shoot up to 15 head, which number may be increased to a total of 25 upon payment of a further sum of £15 in the one case and £5 in the other.

Class "C."—The Administrator may, if he is satisfied that the animals are actually required for scientific purposes, grant to the holder of a game licence permission to shoot or capture any of the species included in this Class. Such permit requires a £5 stamp. Applications in writing, together with proof of *bona fides*, should be addressed to the Secretary for Agriculture.

Game for Farming Purposes.—Permits are granted for the capture of Eland, Ostrich, Zebra or other animals for the purposes of breeding or farming. Such permits require a stamp of the value of £1 and remain in force for six months. Application, accompanied by a sworn declaration, should be made through the Secretary for Agriculture or the Civil Commissioner of the district.

Game Injuring Crops.—The occupier of any cultivated land or any person acting under the authority of such occupier, may at any time destroy game actually doing damage in such land.

Elephants on occupied farms. *Melsetter.*—The destruction of Elephants when found on occupied farms on the High Veldt in Melsetter District is authorised (*Vide* Government Notice No. 284 of 1908).

Tsetse Fly, Hartley District.—Government Notice No. 40 of 1909 withdraws the Close Season for Class "B" in a certain area in the Hartley District until 30th June, 1910, and transfers from Class "C" to Class "B" Eland, Koodoo, and Zebra so far as that area is concerned. This means that these species may be shot by Residents of Southern Rhodesia on a £5 licence, and by non-Residents on a £25 licence, in this area, at any time up to the 30th June, 1910, in addition to the game described in Class "B."

Game in Class "A" may be hunted in the close season ending 30th April, 1909, on private land in the Melsetter District by holders of a licence.

Protected Areas.—No game may be hunted or killed within the limits of the Commonages or Townlands of Salisbury, Bulawayo, Umtali and Melsetter; within a radius of two miles of the Court House, Gwelo, or within the Urungwe Game Sanctuary, as defined by Government Notice No. 237 of 1906.

"Locust Birds" are strictly protected, *vide* Government Notice No. 121 of 1907.

Export of Game.—No living Game or the Eggs of any Game birds may be exported beyond the limits of Southern Rhodesia without a written permit.

Shooting on Private Land.—A licence does not entitle the holder thereof to shoot on private land without the permission of the landowner.

No. 9 of 1907.

NORTH-WESTERN RHODESIA.

WHEREAS there is reason to believe that certain diseases in cattle exist in the Territory of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, and it is therefore expedient to take measures to prevent the spread of such diseases to North-Western Rhodesia.

Now, therefore, under and by virtue of the powers in me vested by Section 2 of His Excellency the High Commissioner's Proclamation, No. 18 of 1906, bearing date the 31st day of July, 1906, I do hereby order and declare and make known as follows:—

1. That Government Notices, No. 2 of 1902, and No. 11 of 1906, are hereby withdrawn, and the following Regulations substituted:
2. The introduction of any bull, ox, cow, heifer or calf or the meat of any such animals, into the Territory of North-Western Rhodesia from the Territories of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, is prohibited until further notice.
3. No person shall introduce into the Territory of North-Western Rhodesia from the Territories aforesaid, any horse, mare, gelding, mule, donkey, sheep, goat or pig, horns or skins, or any kind of vehicle, wagon gear, trek gear, or harness, without having first obtained the special permission in writing of a District Commissioner, Civil Commissioner, or other person thereto authorized by me; and such animals, horses, skins, vehicles, gear, or harness, shall enter the Territory of North-Western Rhodesia at such place, and under such conditions as regards quarantine and disinfection, as shall be ordered by the person issuing such written permission as is above described.
4. Whenever any conditions as to quarantine, isolation, disinfection or otherwise, are imposed, such conditions shall be fulfilled at the sole risk and expense of the owner, consignee, or other person concerned.
5. All live stock imported into the Territory by rail by way of Victoria Falls and Livingstone, shall be inspected at Livingstone Station, and, whenever disinfection is ordered, shall be disinfected at that Station.
6. In the case of live stock consigned to any point on the railway line north of Livingstone Station, the officer authorized to issue the written permission aforesaid shall further order the disinfection of the truck or horse-box in which such stock is being conveyed. Such disinfection shall be carried out at the expense of the owner or consignee of the stock, or other person concerned therein.
7. Consignors and importers of live stock shall give not less than seven days' notice of the arrival of such stock at Livingstone Station. Such notice shall be given to the Civil Commissioner, Livingstone, or to such other official as may hereafter be appointed.

ROBERT CODRINGTON,
Administrator.

By command of His Honour the Administrator,

HENRY RANGELEY,
Acting Secretary.

Administrator's Office,
Livingstone, North-Western Rhodesia
30th September, 1907.

No. 5 of 1909.

Department of Agriculture,

Administrator's Office,

Salisbury, 7th January, 1909.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 207 of 1908, and amend Government Notice No. 217 of 1907, by extending the provision of section 6 thereof to the movement of working cattle in the native district of Ndanga, and that part of the native district of Victoria lying to the north of the Ndanga main road.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

P. D. L. FYNN,

Acting Treasurer.

[Ordinance No. 1, 1908.]

[Promulgated 18th December, 1908.]

SOUTHERN RHODESIA.

AN ORDINANCE TO FURTHER AMEND THE LAW WITH REFERENCE TO THE
BRANDING OF STOCK.

BE IT ENACTED by the Administrator of Southern Rhodesia, with the advice and consent of the Legislative Council thereof, as follows:—

1. Sections 7, 8, 9, 10 and 13 of "The Brands Ordinance, 1900" (hereinafter referred to as the said Ordinance), and so much of any other law as is repugnant to or inconsistent with the provisions of this Ordinance are hereby repealed; but such repeal shall not be taken to affect the validity of any brand duly registered at the time of coming into operation of this Ordinance.

2. No person shall have the right of claiming to have any special form or design of brand allotted to him, but any person requiring a brand shall, on application, and on payment of the prescribed fee, have a brand allotted to him by the Registrar.

3. Section 23 of the said Ordinance is hereby amended by the addition of the following sub-section:—

"(6) The system and procedure to be observed by the Registrar in allotting brands."

4. This Ordinance may be cited for all purposes as the "Brands Ordinance Amendment Ordinance, 1908."

Above is the text of the Ordinance passed during the last Session of the Legislative Council, the object of the Ordinance being to so amend the Brands Ordinance, 1900, as to permit of the system of branding known as the "Three piece system."

Following are the regulations promulgated under the Ordinance, and which brought the new system of registration into operation on 7th January, 1909

No. 391* of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 17th December, 1908.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908

UNDER and by virtue of the powers vested in me by "The Brands Ordinance, 1900," as amended by the "Brands Ordinance Amendment Ordinance, 1908," I do hereby cancel and withdraw the Regulations published under Government Notice No. 204 of 1900, and declare the following shall be in force in lieu thereof, from and after the 7th January, 1909 :—

1. The Registrar of Brands shall have his office in the Agricultural Department. With the exception of the Magistrate of Salisbury, the Magistrate in each district of Southern Rhodesia, and the Assistant Magistrate in each sub-district, shall be a deputy Registrar of Brands for the magisterial district or sub-district to which he is appointed. The offices of the Deputy Registrars of Brands shall be the offices of the several Magistrates.

2. (a) The form of application for registration of a brand shall be that marked "A" in the schedule attached to this Notice.

(b) The form of a certificate of registration shall be that marked "B" in the said schedule.

(c) The form of a transfer of a brand from one registered proprietor to another shall be that marked "C" in the said schedule.

(d) The form of a certificate of such transfer shall be that marked "D" in the said schedule.

3. Each Deputy Registrar of Brands shall keep a register, in the form of Schedule "E" hereto, of all brands allotted within his district under the provisions of the Ordinance.

4. Save as hereinafter provided, every registered brand shall consist of two letters and a numeral of plain and uniform pattern; and the first of the letters shall indicate the magisterial district or sub-district in which the holding is situate on which the brand is to be used, and shall be placed above the numeral and letter comprising the brand, so as to be in triangular form.

5. One brand and no more shall be allotted to any person in one magisterial district or sub-district.

6. The size of the characters branded on stock shall not be more than three inches in height nor more than two inches in width.

7. An applicant for a brand shall be allotted the next vacant brand assigned to the district in which he is located, as set forth in Schedule "F" hereof.

8. Each Deputy Registrar shall keep a list of brands assigned to his district, for the inspection of applicants for brands.

9. There shall be payable to the Registrar or Deputy Registrar :—

(a) For every separate registration of a brand, 5s.

(b) For every transfer of a brand, 5s.

10. All brands shall be imprinted on stock as follows :—

(a) In the case of horses, mules or donkeys, the first brand shall be imprinted either on the near side of the neck or near rump, and any second or subsequent brand shall (where there is sufficient space for such purpose) be imprinted on the same part of such animal, and at a distance of not less than one and a half inches from and directly underneath last imprint, according to the table herein set forth.

Where there is not sufficient space for the purpose, then such second or subsequent brand shall be imprinted on the part of such animal next in order, according to the following table :—

- i. Off Neck or Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(b) In the case of cattle, the first brand shall be imprinted on the near rump or thigh of the animal, and every second or subsequent brand shall be imprinted at a distance of not less than one and a half inches from and directly underneath the brand last imprinted, according to the following table :—

- i. Off Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(c) In the case of sheep and goats, the first brand shall be imprinted on the near shoulder, and all second or subsequent brands in the following order :—

- i. On Near Side or Ribs ;
- ii. Near Rump (or Thigh) ;
- iii. Off Shoulder ;
- iv. Off Side or Ribs ;
- v. Off Rump (or Thigh).

(d) In the case of ostriches :—

- i. On near Thigh ;
- ii. On Off Thigh.

11. Each proprietor of a registered brand shall have the right, in addition to imprinting his brand in the manner above prescribed, to place such brand on the ears of such animals by punching, tattooing or ear-rivets.

12. The owner of any brand may surrender the same, and the Registrar shall, on receipt of notice thereof, cancel the registration by notice in the *Gazette*.

13. When it appears to the Registrar, upon the report of a Deputy Registrar, Native Commissioner, or Cattle Inspector, that a registered brand is not in use, he may cause notice thereof to be given to the owner thereof, calling upon him to show cause why the same should not be cancelled ; if cause is not shown to the satisfaction of the Registrar within six months after such notice, he may cancel the brand.

14. No brand which has been surrendered or cancelled shall be re-allotted until a period of five years from such surrender or cancellation has elapsed.

15. The Registrar shall, at the end of each quarter in every year, or as soon thereafter as possible, transmit for publication in the *Gazette* a statement, in the form of Schedule " E " hereto, of all brands registered under the Ordinance up to the last day of such quarter.

16. The Registrar shall allot a brand to every public pound already or hereafter to be established, and shall register the same.

The first character of every such brand shall be a diamond, and the second the dominant letter of the magisterial district or sub-district, and the third a numeral, the dominant letter to be placed above the diamond and numeral so as to form a triangle ; and the Poundmaster shall, on sale of any stock impounded therein, brand the same with such brand on the portions and in

the order prescribed in these Regulations, to show that the said brand is the last brand at that time imprinted on such stock; and any Poundmaster who shall fail to comply with the provisions of this section shall on conviction be liable to a fine not exceeding £5.

W. H. MILTON,

Administrator

By command of His Honour the Administrator in Council

P. D. L. FYNN

Acting Treasurer.

SCHEDULE A.

APPLICATION FOR A BRAND

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

To the Deputy Registrar,

Herewith ^{we}_I enclose the prescribed fee of and request that you will allot and register a brand for the holding or place mentioned in the Schedule below.

Name of Applicant in full.	Address	District or Sub-district for which Brand is required.

Date.....

Applicant.

SCHEDULE B.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No.....

.....day of.....

I hereby certify that the brand shown in the diagram at foot hereof was duly registered on the date and as the brand of the person(s) therein set forth in the schedule hereto.

Owner(s)' full Name.	Address.	District for which Brand is registered.	Date of Registration.

Fee paid.....

Diagram of Brand.....

(Signed).....

Registrar of Brands.

SCHEDULE C.

MEMORANDUM OF TRANSFER OF BRAND.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

We, ...being the registered owner(s) of the
 I, ...of and hereby
 brand set forth in the schedule hereto, do hereby agree to the transfer of the
 same to and hereby
 request that the same may be registered accordingly. And ^{we} I
, the second undersigned, do also hereby agree to the said
 transfer and enclose the fee therefor (..... Shillings).

Witness..... Owner.

Address.....

Witness..... Transferee.

Address.....

Brand.	Name and Address of Registered Owner of Brand.	District where Brand is Registered.	No. of Certificate.	Date of Registration.

SCHEDULE D.

CERTIFICATE OF TRANSFER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No..... Date.....

This is to certify that the brand shown at the foot hereof was this day
 transferred from..... of
 to..... of

Fee paid £..... Dated this..... day of

Registrar of Brands.

Brand.	Transferee's Name and Address.	District where Brand is to be used.	No. of Certificate.	Date of Registration.

SCHEDULE E.

DISTRICT BRANDS REGISTER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

Name of Registered Owner.	Address.	District for which Brand is Registered.	Particulars of Brand.		
			Brand Allotted.	No. of Certificate.	Date of Registration.

SCHEDULE F.

Brands allotted to different magisterial districts and sub-districts.

Dominant Letter.	District denoted.					Brands Series.
A	Salisbury	..	..	..	..	A 2 A and variations.
						A A 2
B	Bulawayo	..	..	..	..	B 2 A "
						B A 2 "
C	Charter	..	..	..	..	C 2 A "
						C A 2 "
E	Belingwe	..	..	..	..	E 2 A "
	(Sub-district of Bulawayo)	..	..	..	..	E A 2 "
F	Mangwendi	..	..	..	..	F 2 A "
	(Sub-district of Salisbury)	..	..	..	..	F A 2 "
G	Gwelo	..	..	..	..	G 2 A "
						G A 2 "
H	Hartley	..	..	..	..	H 2 A "
						H A 2 "
J	Bubi	..	..	..	..	J 2 A "
	(Sub-district of Bulawayo)	..	..	..	..	J A 2 "
K	Wankie	..	..	..	..	K 2 A "
	(Sub-district of Bulawayo)	..	..	..	..	K A 2 "

Dominant Letter,	District denoted,					Brands Series	
L	Lomagondi	(Sub-district of Salisbury)	..	..	..	L	and variations,
						2 A	
M	Mazoe	(Sub-district of Salisbury)	..	..	..	L	,
						A 2	
N	Bulilima-Mangwe	(Sub-district of Bulawayo)	..	..	..	M	,
						2 A	
P	Mafungabusi	(Sub-district of Gwelo)	..	..	..	M	,
						A 2	
R	Chibi	(Sub-district of Victoria)	..	..	..	N	,
						2 A	
S	Melsetter		..	..	..	N	,
						A 2	
T	Tuli		..	..	..	P	
						2 A	
U	Umtali		..	..	..	P	
						A 2	
V	Victoria		..	..	..	R	
						2 A	
W	Gwanda	(Sub-district of Bulawayo)	..	..	..	R	
						A 2	
X	Makoni	(Sub-district of Umtali)	..	..	..	S	
						2 A	
						S	
						A 2	
						T	
						2 A	
						T	
						A 2	
						U	
						2 A	
						U	
						A 2	
						V	
						2 A	
						V	
						A 2	
						W	
						2 A	
						W	
						A 2	
						X	
						2 A	
						X	
						A 2	

NOTE.—Reserved for distribution (if required), all brands with the numerals as dominants, thus—2 AA to 9 ZZ. Permanently reserved, the letters O and I (to be used exclusively as numerals). The letters Q, Y and Z are unallotted. The letter D reserved for Government Departments.

No. 51 of 1909.

Department of Agriculture,
Administrator's Office, !

Salisbury, 25th March, 1909.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

UNDER and by virtue of the powers vested in me by the "Brands Ordinance 1900," as amended by the "Brands Ordinance Amendment Ordinance, 1908," I do hereby declare that the following districts have been added to

those shown in Schedule F of Government Notice No. 391 of 1908, and brands allotted as under :—

Dominant Letter or Numeral.	District Denoted.	Brands Series.
Y	Inyanga	Y 2A and variations Y A2
Z	Insiza	Z 2A and variations Z A2
2	Matopo	2 AA and variations 2 ZZ
Q	Selukwe	Q 2A and variations Q A2

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 52 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 25th March, 1909.

CONDITIONS UNDER WHICH GOVERNMENT VETERINARY SURGEONS' SERVICES ARE AVAILABLE TO THE PUBLIC.

1. **O**N and after 1st April, 1909, the services of Government Veterinary Surgeons will be available to the public, free of charge for the following purposes only :—

(1) Attending and giving professional advice in connection with the following diseases, viz. :—Anthrax, Contagious abortion, East Coast Fever, Epizootic Lymphangitis, Foot and Mouth Disease, Farcy, Foot-rot, Heartwater, Glanders, Intestinal parasites amongst sheep and goats, Liver Disease, Lung-sickness, Osteo Porosis, Malarial Catarrhal Fever (blue tongue), Rabies, Redwater, Rinderpest, Scabies, Sponziekte (quarter evil), Swine Fever, and any other diseases which way in future be scheduled in terms of section 3 sub-section 18 of the "Animals Diseases Consolidation Ordinance, 1906." Attending to cases of disease amongst live stock which, though not of a contagious or infectious character, may be of general public importance.

(2) Applying tests in regard to Glanders, Tuberculosis, or any other disease against the introduction or spread of which tests are applied under regulations.

(3) Inoculations against the following diseases —

Horsesickness, Lungsickness, Anthrax, Quarter Evil, Redwater, Malarial Catarrhal Fever (blue tongue). A fee to cover the cost of serum and virus will be charged.

2. The following charges shall be made and payable for services rendered by the Government Veterinary Surgeons in other cases, viz. :—

- | | | | |
|---|---|----|----|
| (1) For every professional visit within three miles of his office or residence | £ | s. | d. |
| | 0 | 5 | 0 |
| (2) For every professional visit beyond such distance.. .. . | 0 | 10 | 6. |
| plus an additional charge of 2s. 6d. per hour whilst engaged in such visits or £2 2s. a day of 24 hours ; | | | |
| (3) For advice given at the Veterinary Surgeon's office, for each animal, per visit | 0 | 2 | 6 |
| (4) The following to be charged in addition to visiting fees :— | | | |
| a. For every examination as to soundness, each | 1 | 1 | 0 |
| b. For castration, horses, each | 1 | 1 | 0 |
| c. „ bulls „ | 0 | 5 | 0 |
| d. „ donkeys „ | 0 | 10 | 6 |
| e. For parturition cases, mares, each | 2 | 2 | 0 |
| f. For parturition cases, cows, each | 1 | 1 | 0 |
| g. For other operations, according to nature, from 5s. to £2 2s. | | | |

3. Double the above fees will be payable for services rendered on Sundays, public holidays, and between the hours of 7 p.m. and 7 a.m.

4. Applicants for the services of Government veterinary surgeons must at their own cost provide the necessary transport for the conveyance of these officers from, and back to, their residence or nearest railway station.

5. Farmers and owners of stock throughout the country frequently telegraph for a Government veterinary surgeon to be sent to attend an animal which has been taken seriously ill. It is rarely possible to comply with these requests at once, as the veterinary surgeon may be engaged on duty which he cannot leave, or is at such a distance from where his services are required that he can hardly be expected to arrive in time to be of any service in an urgent case. Hence much valuable time is wasted, the owner of the animal is dissatisfied, and the veterinary staff discredited. To obviate this, in all cases where veterinary advice and assistance are required, the owner should telegraph to "Veteran," Salisbury, with prepaid reply, the nature of the complaint that the animal is suffering from, giving as full and accurate a description of the symptoms as possible. This will enable the Chief Veterinary Surgeon to telegraph advice at once and state whether he is able to arrange for veterinary attendance on the case or not, and save valuable time, which is always of importance in acute cases.

6. The services of Government veterinary surgeons will only be available for private work with the consent of such officers, and when such work does not interfere with their official duties, or when the services of a private practitioner are not available.

7. As the arrangement of allowing Government veterinary surgeons to attend to private cases is intended purely for the benefit of farmers and stock-owners who may wish to obtain professional advice, no responsibility whatever will be accepted for any loss of stock, etc., which may result from the negligent treatment or advice, or wilful default, of any Government veterinary surgeon.

8. All fees collected in terms of these Regulations are payable to the Treasury through the local Receiver of Revenue.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

Departmental Notices.

As Assistant Magistrates have not been appointed to all the Districts and Sub-districts to which a series of Brands have been allotted, the registration of Brands in such Districts will be carried out by the Officers enumerated in the following notice, which was published for the information of stock-breeders :

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

With reference to the regulations published under Government Notice No. 391 of 1908, it is hereby notified for public information that the undermentioned Officers are the Deputy Registrars and Registrars of Brands for the Districts or Sub-districts set opposite their names.

Districts and Sub-districts.	Deputy Registrar.
Bubi	Assistant Magistrate, Inyati.
Bulalima Mangwe	Assistant Magistrate, Yegwani.
Charter... ..	Magistrate, Enkeldoorn.
Chibi	Magistrate, Victoria.
Mafungabusi	Magistrate, Bulawayo.
Makoni... ..	Magistrate, Umtali.
Mangwendi	Registrar of Brands, Salisbury.
Wankie	Magistrate, Bulawayo.
Tuli... ..	Magistrate, Gwanda.

For the information and guidance of Stockowners the following notes and directions are published :—

1. All brands registered under the old system prior to the 7th January, 1909, will continue to be current, except in cases where the registered owners have ceased to use them ; all obsolete brands will in due course be cancelled.

2. Printed forms of application for brands have been supplied to every Deputy Registrar of Brands, *i.e.*, to the Magistrates and Assistant Magistrates of the Districts and Sub-districts to which a series of brands have been allotted.

Applicants for brands should fill in the form, and forward, with the registration fee, to the Deputy Registrar of the District for which the brand is required.

On receipt of the application the Deputy Registrar will allot the next brand vacant on the list, and will issue a

Registration Certificate, after which the applicant will be entitled to the exclusive use of the brand.

3. All brands will consist of two letters of the alphabet and a numeral of plain and uniform pattern, and will be in the form of a triangle, the dominant letter of the District forming the apex, and a numeral and letter forming the base, thus for the district of Salisbury the first brand allotted would be "A"

2 A

4. The maximum size of a brand is fixed at three inches in height, and two inches in width; the object of limiting the size of brand is to prevent the use of brands which make an unsightly impression, causing unnecessary pain to the animal, and damage to the hide.

Stockowners are urged to make their brands as small as possible consistent with clearness, and with as fine a burning edge as possible, to insure a sharp, clear impression on the hide.

5. Rules for branding.

These are clearly set forth in Section 10 of the regulations which has been printed on the back of the Registration Certificate for the guidance of owners.

The order of placing the brand as laid down in the regulations must be strictly followed.

The object in prescribing the order in which brands are placed on an animal is to insure that the owner of lost, straying, or stolen stock being readily traced. If brands are placed indiscriminately on an animal which has changed hands frequently, it is not possible to trace the registered owner without considerable delay ensuing, whereas if brands are impressed in proper rotation, the owner of the brand last impressed on the animal can be readily traced.

6. The owners of registered brands have the right to, in addition to imprinting their brands in the order prescribed, place such brand on the ears of animals by punching, tattooing, or ear-rivets.

7. Registered owners of brands have the right to surrender their brands, and brands surrendered will be cancelled. In cases where it is found that registered brands are not being used, the Registrar may call upon the owner to show cause why it should not be cancelled, and if cause is not shown, such brand may be cancelled. No brand which has been surrendered or cancelled can be re-allotted for 5 years from date of cancellation.

8. With a view of ensuring accuracy and uniformity in the making of branding irons, special arrangements will be made with local firms of blacksmiths to supply branding irons at a contract price.

An applicant for a brand may, on depositing the cost of branding iron, receive from the Deputy Registrar a requisition for a branding iron to be supplied by the contractor.

DESTRUCTION OF WILD CARNIVORA, ETC.

It is hereby notified for public information that the rewards for the destruction of wild carnivora, etc., will be paid only on the scale and conditions herein set forth.

2. Rewards will be paid as follows:—

For each Lion	... ..	£3	0	0
„ Leopard	... ..	1	0	0
„ Cheetah	... ..	1	0	0
„ Wild Dog	... ..	0	10	0
„ Crocodile, of not less than 3 ft. in length	... ..	0	10	0

3. Rewards will be paid to Europeans by the Magistrate or Native Commissioner, and to natives by the Native Commissioner of the district, within three months of the date upon which the animal is killed, on a declaration made in the form of the annexure hereto.

4. In proof of destruction, applicants for rewards will be required to produce and surrender, in the case of Lion, Leopard or Cheetah, the skin with the tail not severed, and in the case of Crocodile or Wild Dog, the unskinned head.

5. The skins and heads of animals for which rewards have been paid shall be the property of the Government, and shall be disposed of in such manner as may be decided on.

GOVERNMENT STALLION FOR PUBLIC STUD.

The Stallion “Robber Knight” has been returned to Salisbury, where his services for a limited number of mares will be available until further notice, free of charge.

Applications, giving full particulars of the mares to be

served, should be addressed to the Veterinary Department, Salisbury, where further particulars can be obtained.

The owners of mares brought to stud will have to make all necessary arrangements for attendance, stabling, and feeding of their animals, as the Department can take no responsibility whatever.

As the number of mares which can be served is very limited, the Veterinary Officer in charge is instructed to refuse service if any mare submitted is suffering from any hereditary disease, or is of an inferior type.

Pedigree.—"Robber Knight" by "Sir Hugo," *ex* "Fritters" by "St. Simon."

The Chief Veterinary Surgeon requests that all Official Correspondence be addressed to the

CHIEF VETERINARY SURGEON,
BOX 123,
SALISBURY.

Communications referring to various Departmental matters are frequently addressed to him personally, with the result that they remain unopened and unattended to in case he is absent on duty.

VAPORITE.

The new preparation, "Vaporite," suitable for the destruction of cut-worms, wire-worms, white ants, and other soil-infesting pests, can be obtained from the Department in quantities of not less than 2 cwt. at 17s. 6d. per cwt. Application to be accompanied by remittance covering cost and transport charges.

TOBACCO SEED.

The following varieties of tobacco seed may now be obtained by planters from this Department at the prices named, which include postage. Orders must be accompanied by remittance.

	per oz.	
	s.	d.
Turkish, Yenedje, Xanthi, Aya Solouk	1	6
Turkish, Cavalla	1	6

TOBACCO SEED BED COVERING.

A large supply of calico for covering tobacco seed is now available. It can be obtained from the Anglo African Trading Company at Salisbury, Bulawayo, and Gwelo. Price 2½d. per square yard.

RHODESIA TURKISH TOBACCO.

The Bulawayo Warehouse asks us to urge upon growers the importance of properly curing their leaf, and to see that the mid-rib is thoroughly dried.

The leaf should preferably be graded and baled "Caloupe" style (*i.e.*, on strings) by the growers on the farm. Where they are unable to do this properly the leaf should be sent in on strings, in boxes or bales, under very slight pressure.

The leaf should be in good condition as regards moisture, so as to enable it to be handled without breakage.

STRYCHNINE.

Stockowners can obtain a limited quantity of strychnine for the destruction of carnivora at a cost of 3s. 6d. per ounce.

Publications obtained at the Agricultural Department, Salisbury:—

CULTURE OF TOBACCO.

This book, by G. M. Odlum, containing the History of the Tobacco Plant from seed to manufacture, can be obtained from this Department. Price 1s., post free 1s. 4d.

"Tree Culture in Southern Rhodesia." By P. B. S. Wrey, A.M.I.C.E. Price 9d.

"Farm Science." Issued by the Harvester Co., of America. Price 3d.

A complete file of "The Rhodesian Agricultural Journal" since its commencement; particulars regarding sale of which may be obtained from the Editor.

Copies of "Money in Lucerne" may be obtained from the Agricultural Department, Salisbury, at the price of 1s. each; remittance to accompany order.

WATER BORING.

It is hereby notified for the information of farmers that the Government has secured the services of Mr. H. M. Oakley, for a period of three months, for the purpose of advising as to the prospects of obtaining a sufficient supply of water by boring, and the best sites for sinking bore-holes.

Mr. Oakley has arrived, and those wishing to avail themselves of his advice, for which no charge will be made, should at once communicate either with the

Secretary of their Farmers' Association, the Civil Commissioner of the district, or the undersigned.

ERIC A. NOBBS,
Director of Agriculture.

MULBERRY CUTTINGS.

Mulberry Cuttings, *f.o.r.* Salisbury 5s. per 100.—Apply, Manager Experimental Nursery, Salisbury.

INQUIRIES.

Farmers are reminded that in all matters relating to agricultural practice, advice is given by the Department in response to inquiries made by them individually.

In particular subjects, such as disease among crops, insect pests and the like, specimens should be sent to the Department, together with as full details as possible.

Advice will be given to farmers who want farm machinery and appliances, seeds, trees, etc.

All communications should be addressed in the first instance to the Director of Agriculture, Salisbury.

NOTICE.

The Manager of the Beira, Mashonaland, and Rhodesia Railways informs us that, on and after the 1st of June, 1909, until further notice, irrigation plant and machinery will be carried at half third class rates, when the consignment is accompanied by a declaration from the consignee or the consignor, as the case may be, that the plant or machinery is actually to be used for irrigation purposes.

Editorial Notices.

Original subscribers to the *Journal*, who have complete sets of the earlier numbers to dispose of, are requested to communicate with this office, as numerous enquiries for the first and second volumes, now out of print, have been received.

Subscriptions to the *Journal* (5s. annually), issued bi-monthly, should be addressed to the Director of Agriculture, Agricultural Department, Salisbury. Only communications relating to the literary department should be addressed to the Editor, and if an answer is required in

the pages of the *Journal*, should reach this office not later than the 15th of the month preceding publication. Subscribers are requested to notify immediately the non-delivery of the *Journal*.

Farmers requiring latest market prices for produce and live stock at Kimberley, Johannesburg, Bulawayo, Gwelo, Salisbury, Umtali, and Beira, can obtain same from this office by next mail or prepaid wire.

Advertisements will be accepted from *bona fide* farmers wishing to effect sale, purchase or exchange of produce, live stock, or farm implements, at a minimum charge of 2s. 6d. per insertion of 20 words. Extra words will be charged for at the rate of 1s. for every ten words.

Applications for Advertisement Rates to be made to J. Kapnek, Sole Advertisement Contractor for "Rhodesian Agricultural Journal," P.O. Box 91, Salisbury and Box 45 Bulawayo.

By Appointment to



His Majesty the King.

BOVRIL

is ALL beef—prime beef in a readily digestible form.

That is why BOVRIL is so invigorating a beverage, so strengthening a food, why cooks find it so useful, why Doctors and Nurses recommend it, why the sensible housewife will have nothing in place of it.

Farmer's Advertisements.

PERSIAN Ram Lambs for sale, from pure bred stock imported from Cape Colony. Apply H. E. Light, c/o. Meikle Bros., Salisbury.

FOR SALE.

PERSIAN RAM LAMBS.

A limited number of three quarter bred acclimatised Ram Lambs for disposal, eight months old; £2 each, Marandella Station.—Apply H. Hay Scorrer, Land Settlement Farm, Marandella.

ADVERTISEMENTS.

MESSRS. MACLAURIN BROS.

(Breeders of Pedigree Friesland Cattle.)

Orders are being booked for young pure-bred Friesland Bulls bred from pedigree sire and dam.

These Bulls are bred and reared on the Farm Pomona, near Salisbury, a Redwater area, and thus farmers may obtain highly bred animals without the usual risks attending importation and immunising.

Particulars of pedigree and prices will be obtained on application to Messrs. McLaurin Bros., Salisbury.

FARMERS' AGENCY.

Farms, Plots and Livestock. Agents for Scott Bros.' Carts, Buggies, Spiders, Gigs, Scotch Carts, Trolleys and Harness, all the best. Glennie's Ox and Mule Wagons, Trolleys, Scotch Carts and Wagon Wood. American Gigs, Wheels, Hand Carts, Bee Hives, Bucksails, Harness, Trek Gear, Tools, Implements, McDougall's Dips, Gates, Fencing, Tents.

3" Hand Jumper Drill, complete £15.

P.O. BOX 73, SALISBURY.

E. F. SHEPPY,

BREEDER OF :: :: ::

Pure Bred Yorkshire and Berkshire Pigs.

Persian Sheep and Angora Goats.

Milk Cows and Breeding Heifers.

Pairs Scotch Cart Oxen; Span Young Oxen.

Hardy Young Bulls of all breeds.

Mares, Donkeys, Farm Mules.

Trees all descriptions. Seeds all kinds.

Swarms of Bees in Hives complete.

American Mammoth Bronze Turkeys.

Splendid White Leghorn Poultry.

Also Silver and White Wyandottes and Buffs.

Silver Grey Dorkings and Plymouth Rocks.

First-Class Pekin and Indian Runner Ducks.

Pigeons all breeds and Good Canaries.

Fox and Irish Terriers and other Puppies.

E. F. SHEPPY, Mount Pleasant,

P.O. Box 73, SALISBURY.

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Double Fertilizers

— specially suited for —

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*TWICE THE STRENGTH and less THAN TWICE
the cost of ordinary manures.*



*Special RHODESIAN Catalogue with all particulars from the
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SALISBURY, BULAWAYO
◊ ◊ & **GWELO,** ◊ ◊

— Or from the Manufacturers: —

The South African Fertilizers Co.,

UMBILO,
DURBAN,
NATAL.

◊ ◊
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**"SAFCO,
UMBILO."**

◊ ◊

◊ ◊
Telephone:

**No. 26,
DURBAN.**

◊ ◊



THE RHODESIAN Agricultural Journal.

*Edited by the Director of Agriculture
assisted by
The Staff of the Agricultural Department.*

VOL. VI.—No. 6.] AUGUST, 1909. [5s. per annum.



Photo by]

[C. E. F. Allen.

Maize arriving at the Farmers' Co-operative Granary, Salisbury.

CAPE TOWN :

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E. BURMESTER,

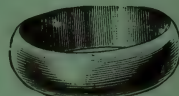
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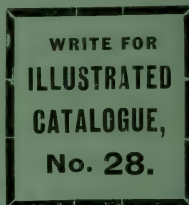
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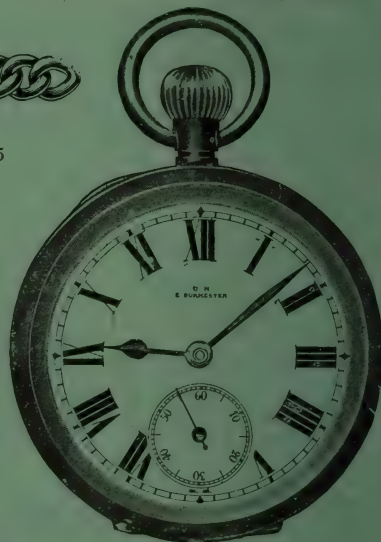
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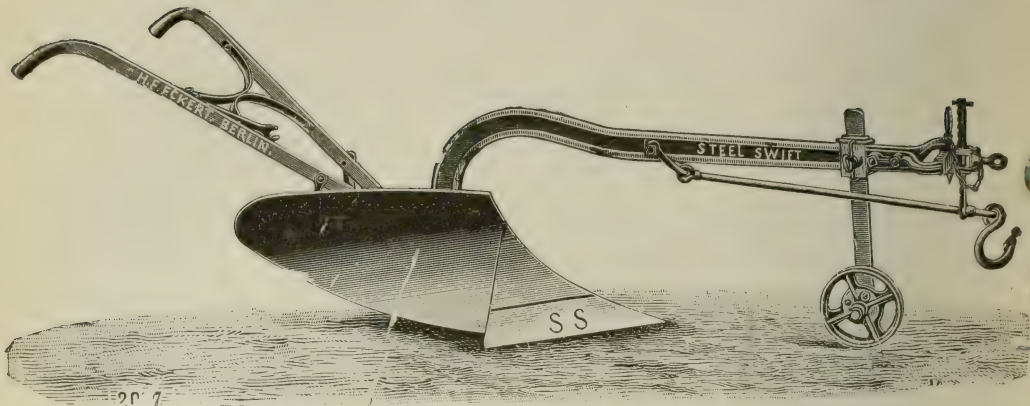
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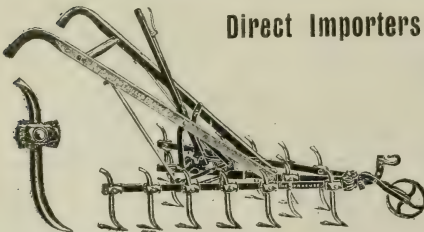
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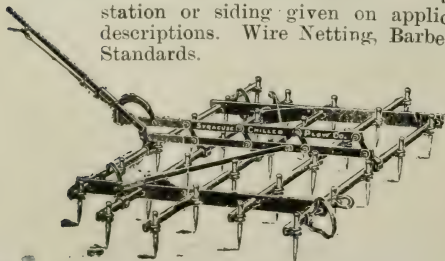
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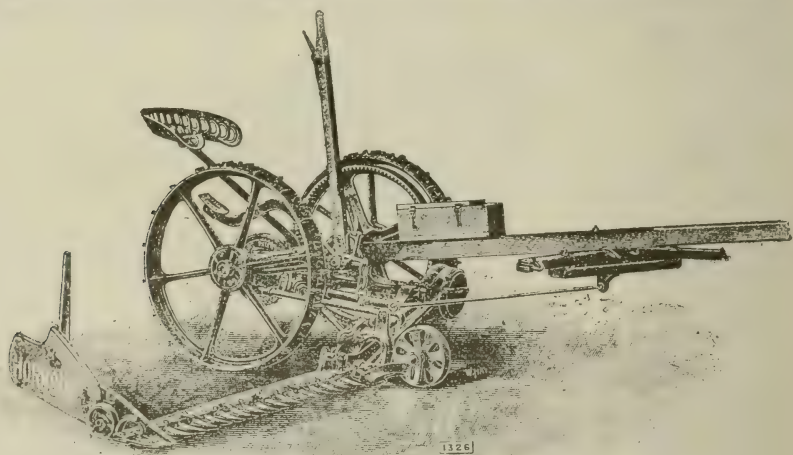
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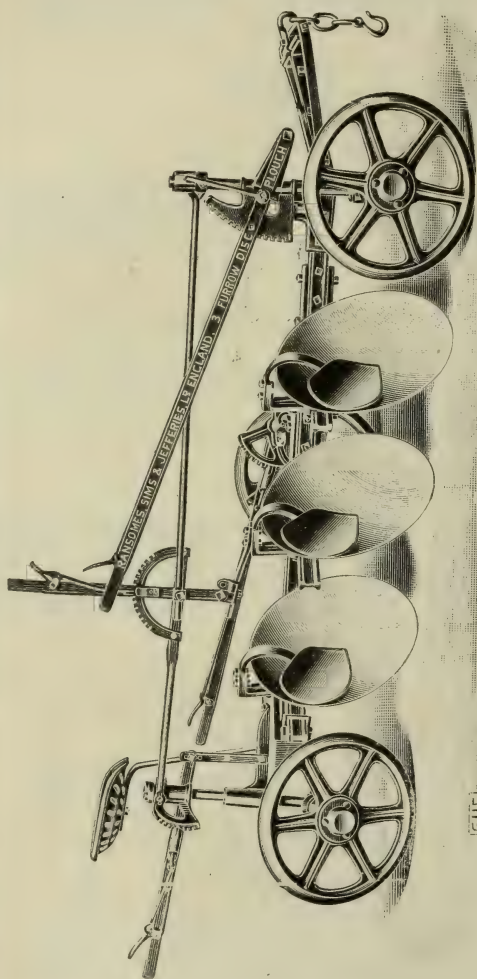
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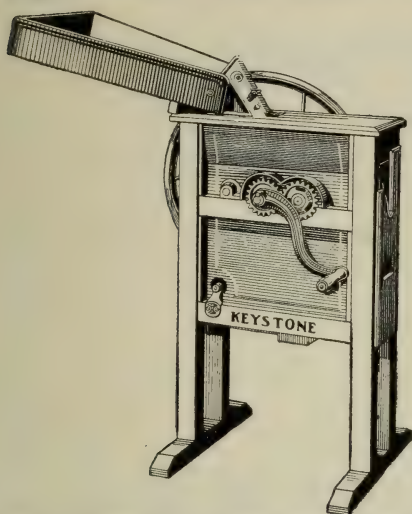
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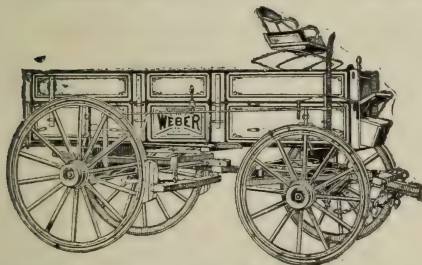
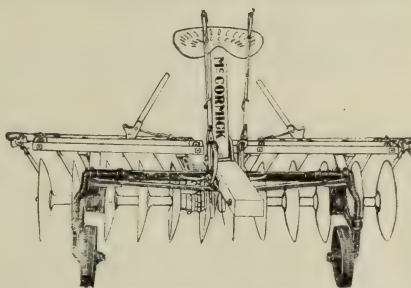
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The Rhodesian Agricultural Union. Congress at Salisbury, June, 1909.

[Strachan, Salisbury.



THE RHODESIAN AGRICULTURAL JOURNAL.

Edited by the Director of Agriculture.

Assisted by the Staff of the Agricultural Department.

VOL. VI.—No. 6.]

AUGUST, 1909.

[5s. per annum.

Editorial.

THE RHODESIAN AGRICULTURAL UNION.—The Annual Congress of the Rhodesian Agricultural Union met recently in Salisbury, and in the course of the debates and deliberations much valuable information was elicited which can in no other way gain expression, and several useful resolutions were passed. The range of subjects was very wide, and the divergence of opinion often equally so. The value of such healthy disputation, however, cannot be over estimated, nor the benefits which delegates from widely separated districts derive from meeting representatives from other parts, and realising their community of aims, or the grounds of their contrary views. It is trusted that these delegates in turn will communicate to the various far scattered associations the decisions of the Union, and that much good may be disseminated thereby. Next year in all probability the Union meets in Bulawayo when an equally strong muster is confidently anticipated. This dialectic Conference forms a fitting climax to the labours and revels of our three Agricultural Shows.

AGRICULTURAL LEGISLATION.—During the past session of the Legislative Council, three measures particularly affecting the agricultural community have become law. The first gives legal status to Agricultural Co-operative

Societies, and at the same time indicates the lines upon which such union may with advantage run. It is a noteworthy feature of the Co-operative movement in Southern Rhodesia that it has arisen and developed without need of Government doles, following in this respect on the lines of other countries, such as Germany, Italy and Denmark, where the movement started from small beginnings, and where it is now such an important feature of the national commerce. No doubt difficulties must and will arise especially at the outset, but the gratifying success that has followed the enterprise so far, should embolden other groups of farmers to unite for similar purposes, and in this they should be guided and assisted by the new Ordinance. A second measure is the application to this country of laws similar to those of the adjoining colonies for the prevention of the spread of insect and fungoid diseases by trees, plants and cuttings sent about the country, and particularly for the inspection of nurseries of fruit trees and other plants. We have long exercised care in inspecting such things when imported from other countries, but there is great need of treating locally grown produce with the same care and even greater suspicion, and provision for this has now been made.

Another Ordinance was also passed which especially aims at protecting apiarists from that insidious disease "Foul Brood," and those who are concerned in the importation of honey, beeswax or live bees, would do well to make themselves familiar with the conditions under which such articles will be admitted henceforth.

THE DEPARTMENT OF AGRICULTURE.—The technical strength of the Department has been augmented by the appointment of two specialists who have entered upon their duties, and farmers and others are invited to seek their assistance on subjects appertaining to their respective spheres.

Mr. H. G. Mundy is in charge of all matters connected with farm crops, and wild and cultivated plants and questions of farm management. Coming direct from similar work in the Transvaal Department of Agriculture, he is familiar with South African conditions, and is in a position to be of much service to the farming community.

Mr. R. Jack takes up the task of studying the insect pests of stock and crops and fruits, and has a wide field before him. Tsetse-fly, ticks, locusts, mealie grub, scale, and a host of other plagues come within his pervue, and having had seven years with Mr. Lounsbury, the Cape Government Entomologist, his experience and advice ought to be of a great value in Rhodesia.

RAILWAY RATES ON AGRICULTURAL PRODUCE.—We have pleasure in publishing the following announcement regarding rates for agricultural produce on the Lomagundi Branch Line, facilitating as it does the conveyance of smaller quantities than whole train loads or truck loads which the average farmer cannot load up at one time, and indicating a genuine effort to meet the farmers' requirements.

The notification states that from the 15th June, 1909, the special train charge of £2 10s. will be abolished, and the following produce rates will apply to Salisbury from the Lomagundi Branch:—Minimum rate, 4s. 6d. per ton, by special or ordinary train. When this rate applies the minimum of one ton for grain, meal, and all kinds of produce will be observed; but when the "distributing centre" rate of one-fourth third class rate exceeds 4s. 6d., the minimum of five tons for grain and meal, and one ton for all other produce will apply.

The rule as regards fractional rates is given in Clause 7 of the Local Tariff Book—fractions of a penny under a half-penny are dropped; half-penny and over are levelled up to the next penny. Consequently 4d., not 3½d. per 100 lbs., is the correct rate for small consignments.

It is also intimated that it has been decided to convey citrus fruits from Salisbury to Bulawayo at 2s. 5d. per hundred, plus cartage, subject to a minimum of 100 lbs. per consignment during the present citrus season.

TOBACCO CULTURE.—It is intimated that arrangements have been made whereby the services of the tobacco experts attached to the Commercial Branch of the B.S.A. Company shall be available for consultative purposes to farmers on questions connected with the culture and curing

of the leaf. As these officers are directly concerned with the grading and purchase of leaf, it is no doubt a material advantage that farmers should be able to seek from them advice as to what to grow, and how best to prepare it.

Communications may be addressed to the Commercial Representative, Bulawayo, or to the Director of Agriculture, Salisbury.

THE SOUTH AFRICAN NATIONAL UNION.—During the last few weeks Rhodesia has received a visit from Sir Pieter Bam, M.L.A., whose mission it was to awaken public interest in the merits of South African grain produce as compared with oversea manufactures. In such a cause he must naturally arouse the sympathy of the producer who is seeking an outlet for what he grows, and finds himself face to face at all points with a prejudice in favour of the foreigner based on a reputation gained in the past, but no longer warranted by fact. It is but right to take every opportunity to dispel these impressions, and by using wherever possible the South African article to open a market for our own wares, either in staples like mealies, wine or tobacco, in manufactures such as wagons and implements, or in household delicacies, as for instance prunes and dried fruit. In these, and a hundred other things, by helping our neighbours we are helping ourselves, keeping money in the country, and at the same time using or consuming products every bit as good as those from abroad on which we have to pay duty. Ere long we will be seeking Southern markets for our own products.

THE AGRICULTURAL SAMPLE ROOM.—As intimated in our last number, a collection of Rhodesian products of economic value has been commenced by the Department of Agriculture, and already a number of specimens of much interest have been gathered together. These are being carefully preserved, bottled and labelled with names, particulars of occurrence, use and donors. At the recent agricultural shows many samples of grain, forage, fruit preserves, woods and other articles were secured, and more have been presented.

Thanks are gratefully tendered to the following for contributions:—

The Jesuit Mission, Empandeni; the Jesuit Mission, Chishawasha; the Methodist Episcopalian Mission, Mutambarra; the Old Umtali Mission, Umtali; Messrs. Curtis & Dennis, Bellevue Dairy, Bulawayo; Messrs. Huntly & Blackler, Bulawayo; Rhodesia Trading Co., Bulawayo; Rhodesia Trading Co., Salisbury; Messrs. J. Wightman & Co., Bulawayo; Messrs. J. Wightman & Co., Salisbury; Messrs. L. Cripps, Umtali; H. P. & H. T. Fynn, Bembesi Ranch, Bulawayo; St. C. B. Gwynn, Nyamandhlovu; A. E. Hill, Bulawayo; H. P. Holl, Bulawayo; E. A. Hull, Westacre, Bulawayo; J. Meikle, Umtali; T. M. Rixon, Insiza; A. N. Strickland, Penhalanga; E. L. Waight, Premier Estate, Umtali; F. S. Woods, Bulawayo; Mesdames Bennett, Umtali; J. Campbell-Rogers, Bulawayo; Eickoff, Umtali; J. Meikle, Umtali; A. R. Welsh, Bulawayo.

DIPPING TANKS.—Following on an article on Ticks and Their Destruction, by Mr. Edmonds, M.R.C.V.S., in the last number of the "Agricultural Journal," we would call the attention of all interested in this most important topic to the further discussion of the subject in this issue. In it Mr. Stirling, M.R.C.V.S., makes an able defence of spraying, conclusively proving its value when properly applied. To this has been added a description detailing quantities and illustrated by scale drawings, all especially prepared by the Public Works Department, of the standard cattle tank at present in use. The numerous enquiries on the subject, and the applications for grants in aid of the construction of private tanks rendered these specifications necessary. Finally we publish with pleasure details of a tank specially devised to overcome the objections raised to the ordinary tanks, and which it is hoped will prove a sufficient substitute, adapted to dipping both cattle and sheep, economising dipping fluid, and saving material in construction, and dealing gently with the stock. It is a combination of dip and spray, and the results of experiments about to be made with it will be watched with widespread and lively interest.

CO-OPERATION IN MAIZE.—The illustration given on the cover gives tangible evidence of the striking success which is being achieved by the Salisbury Farmers' Co-operative Society. This great shed, the largest of its kind in Rhodesia, has accommodation for 25,000 bags of maize, but this will by no means suffice for the requirements of the season, and a stack will have to be built close by in the open. The Society is to be congratulated on the results which besides reflecting the greatest credit on the Committee, augurs well for the future of agricultural co-operation in Rhodesia.

MAIZE PRIZE COMPETITION.—We would call the attention of mealie growers, whose exhibits formed such attractive features at our recent shows, to the terms of the competition, open to all South Africa, to be held at the next Annual Show of the Bloemfontein and Orange River Colony Agricultural Society at Bloemfontein on March 22nd, 23rd, and 24th, 1910, our attention to which has kindly been drawn by the Secretary. It is hoped that Rhodesia may take a conspicuous and honourable place in this competition to show what can be done in this part of the world. In view of the date being so early, probably crops already harvested will have to compete. The following are the details of the Special Prize given by De Beers' Consolidated Mines, Ltd., for the Best Exhibit of Maize, to consist of three muid bags of grain and one muid bag of ears of one variety, South African grown, on "dry lands." The bag of ears to be representative of the crop from which the grain was threshed. A certificate *must* accompany *each entry*, signed in the presence of a Field Cornet or J.P., stating that the exhibitor has produced at least 200 bags of maize on dry lands during the season, and that this particular exhibit was grown without irrigation. Prize, £20.

In the above prize for maize it must be clearly understood that the required certificate must be posted to the Secretary with the entry form and entrance fees, otherwise the entry will be disqualified.

Also note that no ears of maize can be entered in more than one class.

Entrance fee will be as follows:—£1 each.

In order to give intending exhibitors some idea of the lines on which their maize will be judged, we append a copy of the approved score card which will be used.

AGRICULTURAL JUDGES' ASSOCIATION OF THE O.R.C.

SCORE CARD FOR MAIZE (MEALIES).

Show	Date.....		
No. of Exhibit.....	Breed.....		
		Points.	
		Possible.	Awarded.
1. Uniformity—			
(a) Trueness to type	5	|	.....
(b) Uniformity of exhibit	5	|	.....
Uniformity of ears indicates that variety has been carefully selected for a number of generations.			
2. Shape of ears—Shape should be cylindrical showing large percentage of grain to cob. Cylindrical shape will permit ear to carry straight parallel rows of kernels from butt to tip	5	|	.....
3. Colour of ears—White variety should have white cob and yellow and red varieties red cob. Deduct 10 points for variation from this. No mealie should be used for seed that has grains of mixed colours	10	|	.....
4. Market Condition.—This refers to soundness of ear and condition of kernels. Ears should be free from decay or fungous disease and kernels should not be shrivelled or chaffy but show full maturity	10	|	.....
5. Tips—Tips should be covered with regular uniform kernels so that no part of cob can be seen	5	|	.....
6. Butts—Butts should be well filled out with even rows of kernels and swell out evenly beyond end of cob around the shank	5	|	.....
7. Kernels—			
(a) Uniformity	5	|	.....
(b) Shape	5	|	.....
Kernels should be uniform in size, shape and colour possessing similar characters. Shape of kernel on broad side should be near as possible that of a wedge. Such shape will permit of largest number of rows of kernels on cob.			
8. Size—(a) Length of ear	10	|	.....
(b) Circumference of ear	5	|	.....
Length to circumference should be as 9 to 7			
9. Space—(a) Between Rows	5	|	.....
(b) Between kernels at cob	5	|	.....
There should be very little space between rows of kernels. A wide space shows shallow kernels of bad shape.			
10. Proportion of grain to ear—Percentage of grain on ear determined by weighing the ears, shelling the grain and re-weighing the cobs and grain. 100 lbs. of ear should never shell out less than 80 lbs. of grain	20	|	.....
	Total	100	

Note.—“ Ear ” means grain and cob before shelling.

THE AGRICULTURAL POST.—It is with pleasure that we call attention to the Government Notice which recently appeared inaugurating in Southern Rhodesia an Agricultural Post on the lines of that so successfully carried on in

the Transvaal. Under this new arrangement it will be possible for farmers to send packages of perishable produce such as butter, eggs and fruit by the most rapid means direct from their farms to the consumer. They will thus have the opportunity of turning into money articles for which previously they could get no market, while the consumers in town will be able to make simple arrangements for securing farm delicacies regularly and in fresh condition, without the time-wasting interference of the middleman.

The rates charged will be precisely half that of the ordinary parcels post, viz., 6d. for the first pound and 3d. for every additional pound or fraction thereof, while parcels must be within the usual postal limits of size and not exceeding a maximum weight of 11 lbs.

It is to be hoped that many farmers will take advantage of the facilities now accorded.

THE PURCHASE OF STUD STOCK BY GOVERNMENT ON BEHALF OF FARMERS.—The scheme only deals with animals of pure breeds—British, foreign and South African—and preference will be given to farmers desiring pedigreed stock.

The Government will undertake the purchase of such stock for farmers on the conditions outlined below, for cash, or on the following terms of payment, viz.:—(1) A deposit on application; (2) one-third total cost on delivery, less amount of deposit; (3) one-third after six months, and (4) one-third after twelve months—both these instalments bearing interest at 6 per cent. or 10 per cent. if not paid at due date. For outstanding instalments promissory notes or surety will have to be given. These terms of credit will only be allowed on purchases up to a total maximum value of £75; sums exceeding that amount are payable in cash along with the first instalment. The Government reserve the right to refuse, without reason given, to accept applications or to fulfil purchases even after deposit has been made. All applications must be on the prescribed form "A," and all formalities complied with before same is registered. Applications will be considered in rotation, but fulfilled as opportunity serves, so that animals may be procured as cheaply as possible. Thus small orders may have to wait until a complete truck load

can be arranged. The buyer must undertake to accept the animal allotted to him, unless it fails to satisfy description as given in the application form. Disputes may be submitted to arbitration. The purchase price will include all expenses up to time of delivery, price paid to original owner, commission and charges of buyer and shipper, freight (including attendance and keep on journey), a charge per head for testing, expenses and keep during testing and inoculation up till time of delivery, and a departmental charge to meet administrative expenditure, but not insurance. The price referred to is that of delivery to applicant at the Government stock yards at Bulawayo or Salisbury. With every application a deposit will be made of £5 per head in the case of large stock and £1 per head in that of small stock, which will be deducted from the amount of the first instalment due. This deposit will be forfeited in the event of the application being withdrawn after having been registered. Stock are not to be disposed of without the written consent of the Controller of Stock until payment is completed.

Purchases will be made by the Department of Agriculture through its authorised representatives. Every effort will be made to secure animals in accordance with particulars furnished by applicants, and to the best advantage. All purchases must conform strictly to the importation regulations as regards age and freedom from contact with contagious disease. Pedigrees, if obtainable, will be supplied. Bulls are to be ringed. The Government will bear all risks of transport and inoculations and of death from any cause until delivery, all losses being chargeable to the vote. All animals failing to pass the necessary tests on arrival shall be destroyed and the loss borne by the Government, and another animal purchased for the applicant. It is not proposed to inoculate against red-water.

The Department will not undertake to purchase stock at precisely the prices specified by applicants, but will endeavour to approximate as nearly as possible to the figures given and not to exceed same by over 20 per cent.

The authorised representatives of the Government in South Africa will be allowed a reasonable commission, with expenses additional. Special terms will be arranged in the case of importations from abroad.

On arrival at Bulawayo or Salisbury animals will be placed in charge of the Veterinary Department to tend and test. On completion of these processes the Veterinary Department will issue a certificate that the animal has recovered from the effects. The applicant or his agent will thereupon be advised to take delivery, which will be granted on payment of first instalment. After date of notification to applicant or his agent, responsibility will cease on part of Department and animal will be kept at owner's risk and a charge for keep levied—for bulls 2s., heifers 1s., small stock 6d., donkeys 1s., and horses 4s. each per diem.

At the request of applicant stock may be sent to him by the Department, but entirely at his risk and expense, and only after receipt of first instalment.

The scheme is permanent and continuous, as far as funds permit, not merely spasmodic or of short duration. It is hoped that the difficulty experienced in the past, due to the brief opportunity and short notice given to farmers, and the consequent disappointment of would-be participants will thus be overcome. The Department is prepared to make importations whenever sufficient orders are received to render a consignment possible.

Forms of application will be sent to all desiring such. The following conditions are published for general information.

FORM "A."

Purchase of Breeding Stock.—Application.

To the Controller of Stock,
Salisbury.

Sir,—

I beg herewith to apply for the under-mentioned stock, to be purchased on my behalf on the conditions set forth on the schedule hereto, with which I declare myself conversant and willing to be bound.

Enclosed find (cheque, draft, etc.) for £..... being deposit due. I agree to pay cash, when called upon, for all purchases (delete following if not applicable) in excess of £75, and for the remainder one-third in cash upon delivery of the said stock, less deposits as above, one-third six months thereafter, and one-third twelve

months after delivery, together with interest at the rate of 6 per cent. per annum from the date of the said delivery, with each instalment as it falls due. Failing the payment of any instalment on due date, the whole of the purchase money with interest thereon at the rate of 10 per cent. shall immediately become due and payable. Until the final instalment has been paid with interest as above, the ownership of the said stock shall not pass to the buyer, but shall remain the property of the B.S.A. Company, and shall not be disposed of except with the consent of the Controller of Stock in writing.

Witness my hand at this
day of 19.....

Signature.....

Witness (1).....

Witness (2).....

I of
do hereby bind myself as surety for the due fulfilment of
the above terms by

Signature.....

Witness (1).....

Witness (2).....

The stock applied for in the foregoing application
comprises:—

Breed and Sex.	Limits of Purchase Price, including all charges and delivery at Salisbury or Bulawayo. £ to £	Particulars (which will be complied with so far as may be in effecting the purchase).

.....
Signature of Applicant.

SCHEDULE TO FORM "A."

*Conditions of Purchase of Breeding Stock from
British South Africa Company.*

The purchaser shall accept the animal or animals allotted to him, unless they fail to satisfy description as given by him in schedule to the application form.

The deposits at time of application are for cattle and horses £5 each, for sheep, goats, or pigs £1 each.

Payment of first instalment must precede delivery.

The Government will meet all losses up to the time notified to purchaser for delivery, after which they shall be entirely at purchaser's risk.

The Controller of Stock may refuse at any time to undertake or complete purchases without assigning reasons for so doing.

.....

Signature of Applicant.

THE WATERING AND FEEDING OF LIVE STOCK ON THE RAILWAY.—In view of the large number of live stock conveyed over long distances in or into Southern Rhodesia, the Department of Agriculture recently approached the various railway administrations concerned with an enquiry as to what facilities for watering, feeding, and tending stock existed, and suggesting the possibility of improvements in certain respects. To these representations replies have now been received, the tenor of which is published for the information of those interested, with the hope that it will lead to the alleviation of much unnecessary suffering, and the arrival of stock at its destination in better condition than is too frequently the case at present. Adequate conveniences now exist, and the consequences of neglect of these facilities must therefore rest with consignors who disregard the necessary precautions, or fail to arrange for the feeding and watering at the very reasonable rates charged by the railway authorities.

With regard to the Beira and Mashonaland and Rhodesia Railways, the following is a list of the stations on these railways where feeding and watering facilities for livestock are available:—

“Choma, Livingstone, Bulawayo, Salisbury, and Umtali.” These are the centres where trains usually stop a sufficient length of time to enable feeding and watering to be done, but there are, of course, ramps for loading and off-loading at many other stations, and sidings from and to which stock is frequently carried.

On the Rhodesia Railways at present the only places between Vryburg and Bulawayo where live stock can be fed and watered are Vryburg and Mafeking.

Further, if the sender of live stock places food in the truck, and requests the Railway Department to feed and water the animals on the journey, the work is undertaken by the station staff upon payment of a charge at the rate of 2s. 6d. per truck at each place where the service is to be performed. The staff, however, at the stations on the Vryburg-Bulawayo section is very limited.

The facilities accorded on the Cape Government Railways are given in Clause 29 of the Goods Tariff Book, which is to the following effect:—

Senders of live stock are desired in all cases to state on the consignment note whether they wish the animals off-loaded, fed and watered en route, and if so, at what depot stations.

The animals must not be detained more than 24 hours, otherwise they will be charged as for two separate journeys. Under either circumstance the reloading charge of 2s. 6d. per short truck is made.

Food, for the use of the animals during the journey, is conveyed free of charge when carried in the same truck, provided that the quantity does not exceed 100 lbs. for each large animal, *i.e.*, horses, mules, foals, cattle and donkeys, or five small animals, *i.e.*, calves under three months of age, sheep, goats, ewes, and pigs, and that the stock is consigned for a distance exceeding 100 miles.

Carriage is to be paid on the weight of food taken delivery of at the end of the journey.

Facilities for feeding and watering livestock are provided at the following stations:—

Western System.—Wellington, Worcester, Grootfontein, Porterville Road, Matjesfontein, Beaufort West, Sir Lowry's Pass, and Kalabas Kraal.

Midland System.—Cradock, Naauwpoort, Uitenhage, Klipplaat, and Graaff-Reinet.

Eastern System.—Queenstown and Sterkstroom (for traffic to and from the Indwe line).

Northern System.—De Aar, Beaconsfield, Kimberley, Vryburg.

Rhodesia Railways (Vryburg-Bulawayo Section).—Mafeking, Lobatsi, Artesia, Francistown, Bulawayo.

In so far as the Northern System is concerned, arrangements have been made for another trough to be fixed outside the kraal at Mafeking, and also to enclose two pieces of ground to form enclosures in which livestock can be tended. A hose pipe has also been fixed at Francistown to supply water at that station for livestock going through. Two portable troughs will be provided to be placed in the trucks and removed after the animals have been watered.

The train from Kimberley to Bulawayo by which stock is usually conveyed is only allowed 30 minutes at Vryburg, 50 minutes at Mafeking, and 30 minutes at Francistown, and in consequence, whilst one or even two trucks of stock might be attended to without being detached, in the great majority of cases the feeding and watering would necessitate trucks being detached and held over for 24, or in some cases 48 hours, according to the train service.

A large quantity of sheep is now sent from Kimberley to Rhodesia, but it is impossible to supply them with water, as they will not drink in the trucks. In Australia, especially in the hot months, sheep travelling long distances are sprayed with water at different points, and this might perhaps be done at Mafeking should need arise.

MALTING BARLEY.—The quality of barley grown in Southern Rhodesia from time to time attracts the attention of maltsters as possessing excellent properties for their purposes, especially as regards maturity and colour. We cull the following from a letter received from the Manager, Castle Breweries, Johannesburg:—

“As we are extremely anxious to encourage the growing of a suitable barley in South Africa, I shall be glad if you would be good enough to send us any samples of

barley you may have on hand, together with the name of the same, and any other information you may have, as by this means we may be able to trace the sample referred to."

Unfortunately barley is grown to a very limited extent at present, usually only under irrigation, and, in view of the greater demand for wheat grown under similar conditions, it is not likely that at the moment barley will be grown in any quantity. In view of the possibilities indicated above, however, the Director of Agriculture will be glad to receive samples of barley from any part of Southern Rhodesia, and will arrange for forwarding them to the above-mentioned company in order that reports on its merits may be obtained for the growers.

REVIEWS OF BOOKS.

"Hints on Fruit Growing," by H. E. V. Pickstone.
(Fourth Edition, 1909.)

We welcome a new edition of this useful and thoroughly practical concise treatise on the science and art of fruit growing in South Africa. It tells us *inter alia* of the origin and rise of the industry and how fruit culture on up-to-date lines in Cape Colony was encouraged at the outset, nearly 20 years ago, by Cecil Rhodes.

The present conditions and future prospects are looked upon, after which brief but lurid sections are devoted to the treatment of land, establishing, cultivating, irrigating, and manuring orchards, new and old, to the different sorts of fruit, to the common pests and injuries, and their treatment, and to the commercial aspects of the subjects. No details are ignored, yet the whole is condensed into 108 pages, all of them well worth the attention of anyone who grows fruit either for profit or for pleasure.

E.A.N.

"Utilisation of Flood Water": The Southey Case.
(Townsend, Taylor and Snashall, Cape Town. 1s.)

This bulky pamphlet (264 pp.) is not in any sense a treatise upon the employment of flood water in agricultural operations. It is primarily an account of the efforts of an enterprising Karroo farmer to prevent the wash of

water in flood time, and of the manner in which a defective law of the Cape Colony robbed him of the fruits of his labour. Since that legal diversion was made by Mr. Justice Maasdorp in December, 1905, an amending act has come into operation in the Cape Colony; but this book leads us to the conclusion that the law in regard to right of riparian owners over flood water is still not sufficiently clear.

No doubt the needs of Rhodesian farmers in this respect are far less pressing than those of farmers in the Karroo; but there are parts of this territory so dry as to make any information on the subject of very great importance to farmers in such localities. Incidentally there is here a great amount of useful suggestion of a general character; but the extent to which Mr. Southey's methods of using the flood water can be copied, depends entirely upon the local circumstances. No farmer, for example, would be pleased to see his irrigable land covered by a plenteous deposit of sand as the result of turning flood water upon it.

There is one general lesson, however, which may be learned from the pamphlet. The tendency of heavy rainfall to run quickly off the land continually increases, unless adequate steps are taken to prevent it. The road or sheep track or native footpath becomes a sluit, this sluit deepens and widens, the vleï dries up, the river bed changes into a huge drain; all works together to take the water off the land in the shortest possible time. If this tendency is to be counteracted, action should be taken at once, delay is always disastrous. What is needed is an observant eye, together with a vigorous application of the old proverb that "a stitch in time saves nine."

L.M.F.

"Hints to South African Farmers," by J. G. McDonald.
(Argus Co. 2s. 6d.)

The title of this little work, and the author's preface which accompanies it, are such as largely to disarm criticism.

It is a book written by an amateur, who, however, takes a very keen intellectual and practical interest in agriculture; and it is intended to help farmers who have had no scientific training.

Within these limits it is a very useful little book. Its remarks on soils, particularly its insistence upon the lack of lime, so common among South African soils, are excellent.

The statements as to the disadvantages attendant upon very deep ploughing are also worthy of note, as will probably astonish farmers who imagine that the greater power of moisture retention thus attained is unaccompanied by any dangers.

In regard to the views put forward on the subject of crops, the conclusions reached are interesting and worthy of attention; but the warning that they are based upon but a small body of experience should be given.

An interesting attempt has been made to set down the recent scientific discoveries on the subject of fertilisation by bacteria in such a form as to make them available to the novice, but the subject is one about which much has still to be learnt. In the meantime the plain man would probably do better to confine his attention to manuring his land suitably, and cultivating leguminous crops not only on account of the yield, but because of their manurial value.

Finally, it is well to remember that advice good in itself may be difficult to follow. No reference is made to the limitations imposed upon the ordinary South African farmer by the smallness of the capital at his disposal, a limitation probably felt much less upon the farms on which the writer's evidence has been obtained, than in the vast majority of cases. This handy little treatise should be a real benefit to many a Rhodesian farmer.

L.M.F.

"Egyptian Agriculture Text Book of 1908."

A fourth book, a copy of which has been received by the Department of Agriculture, through the courtesy of the Minister of Education, Cairo, is a text book of Egyptian Agriculture (Vol. 1) the joint work of Messrs. Foaden & Fletcher, two recognised authorities on the subject with which they deal, assisted by other members of the staff of the Khedevial Agricultural Society and the School of Agriculture, Gizeh. The conditions of Egypt with its

fertile alluvial soil, cultivated to the utmost limit, its marvellous system of irrigation, its dense and intensely conservative population, are the very antithesis of what we find in Rhodesia. Yet for reference purposes the book is of value to us, being thoroughly practical throughout, and giving clear descriptions of the methods of cultivation in vogue, the implements in use, and the facilities employed, together with a statement of the theories underlying the applications of scientific law to farm operations, which for simplicity, clearness and brevity, is a model of how science should be rendered palatable to the lay mind. A second volume is promised, dealing with farm crops, fruit and vegetables, seed and crop rotations, including many which are grown here, like maize, sorghum (Kafir corn), beans, earthnuts, and some which deserve to be tried like flax, til, lentils, berseem, sesame, chickpeas, indigo, safflower and so on. Farm animals and farm pests are dealt with, and a chapter is devoted to dairying, which in Egypt is unique in this respect that the milch cows are buffaloes.

The book is in many respects a model of what a text book upon the agriculture of one particular locality should be, and has the crowning merit of being well and judiciously illustrated.

E.A.N.

DATES OF MEETINGS OF FARMERS' ASSOCIATIONS, 1909.

Name of Association.	Place of Meeting.	Aug.	Sept.	Oct.	Nov.	Dec.
Enkeldoorn F. Association	Enkeldoorn	28	25	30	27	25
Lomagundi "	Eldorado Mine	14	11	9	13	11
Makoni "	Rusapi	...	15	...	...	15
Marandellas "	Marandellas	7	...	2	...	4
Mashonaland "	Salisbury, 1 p.m.	7	4	2	6	4
Manica F. & Landowners Association.	Umtali	7	4	2	6	4
Rhodesian Landowners & Farmers Association.	Bulawayo, 3 p.m....	26	30	28	25	30
Do.	Matopos	29	26	31	28	26
Do.	Plumtree	...	...	7	...	...
Do.	Figtree	Dates irregular.				
Eastern District of Victoria	Farm Good Hope...	7	...	...	6	...

The Prevention and Treatment of Blackwater Fever.

FOR THE USE OF FARMERS AND
SETTLERS.

By A. M. FLEMING, C.M.G., M.B., F.R.C.S. (Edin.),
D.Ph. (Camb.), Medical Director for Southern
Rhodesia.

At the present stage of our knowledge, Blackwater Fever may be considered to be the result of Malarial infection, which has been imperfectly treated. The vast majority of cases show a history of recurrent attacks of malaria, which have been made light of, the patient having possibly, whilst the symptoms were acute, taken a few doses of quinine, and then not bothered further.

A great deal has been written, and more talked about, the dangers of taking quinine, and how it is supposed to bring on Blackwater Fever, and I would like, at the start, to disabuse the mind of the public on this point.

The theory, for it still remains a theory, that quinine is responsible for the appearance of Blackwater Fever is by no means a new one, and, lately, has received the support of Professor Koch. The worst of it is that Professor Koch's arguments and conclusions have never been properly understood by the public, and I have often been told by the ignorant that, Professor Koch having proved that quinine caused Blackwater Fever, to take quinine for malaria was merely courting disaster.

Now, I have had the pleasure of discussing this very point with Professor Koch himself, and can with certainty affirm that he never said anything of the sort. What Professor Koch did say was that in his opinion persons who were infected with malaria which had been imperfectly treated with quinine, became after a time predisposed to Blackwater Fever, and when in that condition a sudden

dose of quinine was often the determining factor in bringing about an attack. He urged, therefore, that all persons infected with malaria should take full doses of quinine, and continue the treatment for some time afterwards, in other words, so habituate themselves to quinine that they never reached the stage of chronic malaria, which predisposed to an attack of Blackwater Fever. A very different statement to the former as you can see.

It is still a disputed point whether quinine is or is not one of the causal factors in determining an outbreak of Blackwater Fever in persons predisposed to it from environment and previous malarial infection, and it is a question upon which much controversy still rages, and at the same time it would be quite out of place to discuss this here; it is sufficient to say that, if all cases of malaria were properly treated from the start with quinine regularly administered, and the administration continued in preventative doses for some weeks or months afterwards, Blackwater Fever would be a much rarer disease amongst us, if not eradicated altogether.

In my experience of many thousands of cases of malaria, I have never seen Blackwater Fever occur in a person who was thoroughly cinchonised, that is so far under the influence of quinine that his ears rung, and he was deaf from it. It is, however, not the cause of Blackwater Fever I want to write about so much as how to recognise it and treat it, when medical aid is not at once available.

There is no difficulty in the recognition. It commences, as a rule, just as any ordinary attack of malaria, though the initial rigor (or shivering attack) is as a rule more severe and prolonged. Shortly afterwards the patient notices that on passing water, his urine looks jet black. If put in a glass vessel and held to the light, however, it is seen to be really a deep rich port wine colour. At the same time he becomes rapidly jaundiced all over, this being specially marked in the whites of the eyes.

At the very first onset the patient should be put to bed, and the bowels opened with a sharp purge, preferably five grains of calomel. The diet should be entirely liquid, of a bland nature, warm milk and barley water being most suitable, if obtainable. The patient must be kept warm, and the greatest care taken to avoid chills and draughts.

If vomiting is severe, and it often is, especially at the outset, the stomach can be washed out by giving large drinks of hot water with a few grains of bi-carbonate of soda dissolved in each tumbler. Nourishment, in this case, should only be given in small quantities (a few spoonfuls at a time) frequently repeated. Stimulants are, as a rule, unnecessary and undesirable, but if found necessary, probably the best is a little weak brandy and soda.

As syncope or heart failure is not an infrequent complication, the patient must on no account leave his bed for any purpose whatsoever, and must not even be allowed to sit up. If suppression, that is stoppage of the flow of urine, threatens, warm applications such as linseed poultices, clothes wrung out of hot water, etc., should be applied to the back, in the region of the kidneys.

As far as drug treatment is concerned, we have unfortunately no specific in Blackwater Fever, as quinine is in Malarial Fever. In British Central Africa, where Blackwater is well known, good results are reported from a modification of what is known as Sternberg's Mixture for Yellow Fever. This consists of thirty drops of Liquor Hydrargyri Perchloridi and ten grains of Bi-carbonate of Soda, taken in water every two hours for the first twenty-four hours, and subsequently every four hours till the urine clears.

Others again have obtained good results from Methyl Arsenate of Soda (arrhenal) in half grain doses dissolved in sterilised water and injected hypodermically every six hours till the urine clears. As this, however, requires the requisite skill for the administration of the hypodermic injection, it can only be given by a medical man or trained nurse.

The administration of quinine in large doses is advocated by some. This, however, should not be attempted, except where a doctor is in attendance and on his advice.

Blackwater Fever is a disease which will repay, more almost than any other, careful and intelligent nursing, and it is in this direction that the uninitiated can do most to alleviate the suffering of the patient and avert disaster, rather than by the administration of powerful drugs, concerning the action of which they know nothing, and the

effects of which they cannot watch. The strictest attention must at all times be paid to the warmth of the patients, the diet and the absence of all excitement or movement, and he or she should never be left long alone.

After the attack and during convalescence, the anæmia and consequent debility is the most marked symptom, and the patient should not leave his bed till at least a fortnight has elapsed after the temperature has fallen and the urine completely cleared. During this time he should be fed upon milk, eggs, jellies, strong soups, etc. An iron tonic should at the same time be given.

Persons who have once had Blackwater Fever are exceedingly prone to further attacks, if re-infected with malaria, so they should accustom themselves to taking quinine in preventative doses for a long time afterwards. Sir Patrick Manson has laid it down as a maxim that all those who have had Blackwater Fever should take five grains of quinine daily, whilst living in a malarial district, and for at least six months after leaving it.

Maize Growing.

By H. GODFREY MUNDY, Agriculturalist and Botanist.

It is only within the last three or four years that South Africa has realised of what vast importance to her the humble maize plant may become. With the advent of an export trade, farmers have been led to look more closely to their methods of cultivation and seed selection, and if we in Rhodesia do not wish to be left behind, we must see to it that our methods bear favourable comparison with those of the other large maize-producing countries of the world.

As is well known there are innumerable so-called varieties of maize of which not a few are familiar to South African farmers.

In Rhodesia it would appear that fewer varieties are grown, but these have so far proved their worth, and afford excellent ground work on which to build.

White maize is at present in better local demand than yellow owing to the fact that natives object to mealie meal ground from yellow maize. For export to Europe, however, colour would appear to be of little account, as long as the grain is of good and even quality, and up to grade. In any case, we have excellent standard white strains, in Hickory King, Boone County White, and in some respects in Salisbury White, though the latter is not yet a fixed strain, often showing variations of type, and not infrequently of colour also. Among yellow varieties, Early Leaming, Golden Eagle and Yellow Flint are grown, and of these the first named is exceedingly hard to beat as a heavy cropping early maturing variety.

It is probable that some other varieties such as Iowa Silver Mine, Hickory Horse-Tooth, Yellow Hogan and Eureka Field Corn might, with advantage, be introduced into the country, but this point the Agricultural Department will shortly take up, when it is hoped a series of experiments in maize growing to extend over several years may be laid down on the Experiment Farm, Gwibi, and on the Botanical Experiment Station, Salisbury.

AUSTRALIAN MAIZE CROP.—In a recent number of the "Victoria Agricultural Journal" some interesting figures are given regarding the maize crop. In Victoria there are

estimated to be 11,559 acres under maize, giving an average yield of 60.99 bushels, or approximately 21 bags per acre. In New South Wales 174,115 acres, yielding 33.10 bushels per acre (approximately $10\frac{1}{2}$ bags), and in Queensland 139,806 acres, with an average yield of 26.49 bushels per acre ($7\frac{1}{2}$ bags approximately).

In the Transvaal the average yield does not probably exceed 5 bags per acre, though in Natal, owing to better methods of cultivation, the crop is somewhat heavier.

To arrive at a correct estimate of the yield in Southern Rhodesia is difficult, but probably from 6 to 8 bags per acre over a comparatively small area may be taken as a fair average.

From the farms in the corn (maize) belt of the United States of America, still larger crops than those reported from Victoria are obtained, and it is therefore evident that much must be done before we can rest satisfied with the yields obtained in Rhodesia.

The question arises, what is the reason of the South African crop being so much lighter than those referred to above? Is it that the soil is less fertile, the seasons less favourable, or is it our present methods that are at fault? Assuredly it is the latter cause, for where thoroughly up-to-date farming is practised, yields of from 15 to 25 bags per acre are not uncommon.

If we consider by what means these increased yields are obtained, we shall find they depend upon the observance of four fundamental principles.

1. Selection of seed.
2. Thorough preparation of the soil.
3. Constant after cultivation.
4. Rotation of crops.

SELECTION OF SEED.—Selection of seed plays a most important part in the resulting crop, just as careful selection of sire and dam are essential to the breeding of good stock. Seed maize should be of the best, pure in strain, true to type, and the grains large and of even size; by this means we ensure as far as possible an even planting—if the planter is used—and a regular and uniform germination. Where small malformed grains are used for seed

it is only to be expected that a poor and uneven germination will result, and this at harvest time often bears fruit in the shape of an uneven crop, weak plants with small cobs, and a large percentage of barren plants.

To obtain the maximum yield per acre the ground must carry as many robust plants as experience teaches is profitable, and each plant should bear at least one, sometimes two, fully developed cobs.

Systematic selection of seed is usually left to the plant breeder, but every farmer can do a certain amount, and so each year improve the strain which he is growing.

It is a recognised fact that "tipping" and "butting" is essential to success, that is to say, the unevenly formed grains at the tip and butt of the cob are removed, and only the uniform regular shaped kernels found in the centre of the cob used for seed.

In addition, in selecting cobs for seed, the following points must be looked for:—

- (a) Uniformity to type, colour of grain and cob, and shape of ear.
- (b) Straight even rows of grain.
- (c) Grain closely packed on the cob, and rows close together, thus ensuring the largest possible number of grains to each ear.
- (d) Ears well filled at butt and tip.

There are many other important points which must be borne in mind by the systematic breeder of pedigree seed, but the above are those which with little trouble can be adhered to by the practical farmer who is growing maize in conjunction with other crops and stock raising.

PREPARATION OF THE SOIL.—This is a point, the importance of which is too often overlooked. Land should not only be ploughed, but it should be pulverized, that is to say the soil which is turned by the plough should be broken down into fine particles, so that the roots of the young maize seedlings can spread and ramify, and by so doing anchor the plant and supply it with that nourishment which is essential to its full development. Land which is turned up rough and sown in this condition not only fails to satisfactorily fulfil the above functions, but further gives up

its soil moisture through evaporation, far more readily than when properly worked to a good tilth.

In a thoroughly prepared and well pulverized seed bed the surface soil water is present in a film around each particle of soil, hence the greater number of minute particles, the greater capacity for holding water.

The friability or openness of the soil is also important, because without this its capacity for absorbing heat, air and moisture is seriously affected. Care must be taken that the turned soil is in close contact with the sub-soil beneath, otherwise the current of capillary action is broken, and but little water can pass from the sub-soil to the surface layers. In consequence, during times of drought, the upper layers of soil dry out excessively, and the maize plant being mainly a surface feeder, suffers accordingly.

PLANTING.—In sowing or planting, the aim should be that each plant as it grows up receives as far as possible an equal amount of air, light, and growing space for its roots. This is one of the reasons why planting in drills almost invariably results in better crops than does broadcast sowing. From 10 to 14 lbs. of seed is required to plant an acre, and for grain production the best results are generally obtained when the rows are spaced three feet apart.

AFTER CULTIVATION.—Thorough preparation of the seed bed entails the partial keeping down of weeds, but in a country like this with a very hot and moist summer, the growth of the weeds is extremely quick and luxuriant, and unless after cultivation is resorted to, weeds will grow more quickly than the crop, and, while the soil is robbed of valuable plant food, the plants are themselves deprived of that air and light which is so necessary to their existence.

During the earlier stages of growth, no better method of cultivation can be followed than that of harrowing with a spike tooth harrow, or weeder; if this is done during the heat of the day when the plants have lost some of their rigidity, it is astonishing how long it can be continued without damage to the crops, moreover a far greater area of land can be covered in a day's work with a harrow than with a cultivator or horse hoe.

When the plants have reached a certain height, the use of a harrow must be discontinued, and it is then that the horse hoe should make its appearance, and if necessary

be continued with until it is no longer possible to take the implement between the rows without damaging the plants.

By the continued use of the harrow, germination of weed seeds is encouraged, while the young seedlings are destroyed almost as soon as they appear, and in this way the need for horse hoeing or scuffling—the more costly process of cultivation is minimized. If harrowing is to give the best results, it must be resorted to immediately each succeeding crop of weeds appears, as once past this stage and firmly rooted, the harrows will make but little impression. As a rule, on moderately clean land, two to four harrowings, and one to three subsequent scufflings, should be sufficient to ensure the crop freedom from weeds, and to enable the soil to absorb and retain an adequate supply of moisture.

ROTATION OF CROPS.—Although maize may be looked upon as the staple crop of Southern Rhodesia at the present time, it must not be thought that the best returns can be obtained if maize and maize only is grown on the same land year after year. Rotation of crops is considered necessary in all countries where agriculture is brought to a high state of perfection, and this applies equally to South Africa.

Different crops require the various plant foods present in the soil in varying proportions, while some, namely, those belonging to the great order of leguminosae, tend to enrich the land on which they are grown. In South Africa as elsewhere it is generally in nitrogenous matter that the soils are wanting or most easily exhausted, and this is cheaply supplied by the growing of leguminous crops, which can either be converted into dry forage or ploughed under for green manure. Among the best of these are Kafir beans or cow peas (*Vigna catjang*) and velvet beans (*Mucuna utilis*), pea nuts or ground nuts (*Arachis hypogæa*) should also prove a profitable leguminous crop for growing in rotation with maize on the lighter and more sandy soils.

The question of the direct application of artificial fertilizers to the maize crop has lately been receiving a good deal of attention, but it is doubtful whether this can be profitably done in Rhodesia at the present high price of manures. It is usually found better policy to apply the

fertilizers to some crop giving a greater monetary return such as wheat, potatoes, or other root crops, while maize may follow the second year, and oats, maize or manna the third. The area of land which is cropped should be roughly divided according to what rotation it is proposed to follow, whether a three year or four year course, etc., and each year as much of one of these divisions as possible should be planted to a leguminous crop, so that all the land may benefit to this extent in the same manner.

There is some tendency at the present time to sacrifice good farming at the expense of getting a large area of land under crop, but in practice it will almost invariably be found better policy to take smaller areas, and do them well. A good crop of say 10 to 15 bags per acre, reaped from a comparatively small area which has been well cared for, will show a better profit than a small yield spread over an area twice or three times as large.

Everything points to the fact that in the near future, with reduced rates for export, maize growing should be of the first importance to Southern Rhodesia, but if good crops are to be grown it is essential that up-to-date methods of farming should be followed. The improvement of maize by systematic seed selection will be dealt with more fully in a subsequent article.

Fruit Fly Injury to Citrus Fruits.

By C. W. MALLY, A.M., Eastern Province Entomologist,
Cape Colony.

The large numbers of fruit fly maggots that developed in the stone fruits during the summer have emerged as flies, and are now busy attacking the citrus fruit as it begins to ripen. In several orchards visited, numbers of the flies could be seen on the trees, and quite a number of the ripest oranges had evidently been punctured. Although comparatively few if any of the eggs are developing at this time, the puncture in the fruit induces premature ripening, and leaves an injury which may seriously

affect its keeping qualities. The punctured spots provide an entrance for the "Blue Mould," which is often the cause of loss in the fruit in storage or in transit. Even though the utmost care is exercised so as not to injure the fruit in picking or handling it, the danger of loss from "Blue Mould" is still an important factor, unless the fruit fly is kept under control. The punctures that are made while the fruit is still of a uniform green colour can be detected by the yellowing of the tissue immediately surrounding them, so that the damaged fruits can easily be detected in that stage. But as the fruit ripens these injured spots are not so easily detected unless they have advanced to the stage where they show as small brownish spots. The punctures that are made when the fruit is turning yellow in the ordinary course of ripening are so difficult to detect that they cannot be culled out in packing for export. Besides, the mere fact of culling them out means such a heavy loss in otherwise sound fruit that the percentage of culls is an important item.

Although a certain amount of damage has already been done in the earlier portion of the crop, the bulk of the crop in most localities is still sound, and can be protected by prompt action in applying the poisoned bait for the destruction of the flies.

The bait should be made as follows :—

Sugar (cheapest grade)	3 pounds.
Arsenate of Lead	4 ozs.
Water (hot or cold)	5 gallons.

Dissolve the sugar and the arsenate of lead in the water and keep well stirred during the application. Apply a light sprinkling of the bait evenly over each tree by means of a common brass garden syringe (20 in. by $1\frac{3}{4}$ in.) using the finest rose. About one syringe full is sufficient for a large tree. The application should be repeated immediately after each rain, at least until the flies have been brought under control. During fine weather the application need not be repeated so long as the specks of sweet can be seen on the leaves—or about once a fortnight.

There is no danger of poisoning from eating the fruit, nor of destroying honey bees.

The Tsetse Fly.

By L. BEVAN, M.R.C.V.S., Government Veterinary Surgeon.

For a long time it has been known that the bites of the Tsetse Fly produces fatal effects upon domestic animals. The exact part played by the fly in producing disease was first demonstrated in 1895 by Lieut.-Colonel (now Sir David) Bruce, who proved that it acted as a carrier of a minute blood parasite (*Trypanosoma brucei*) which appears to live normally in the blood of many species of wild animals in Africa without doing them any harm, but when taken therefrom and introduced by the proboscis of the Tsetse into the blood of domestic animals, multiplies with enormous rapidity and eventually causes death. It follows, therefore, that any preventive measures against the disease must be based upon an accurate knowledge of the habits and distribution of the Tsetse Fly—the carrier of the disease—and the source of its supply of the blood parasite.

For this reason the public is invited to assist the Veterinary Department in obtaining reliable information on these important points, to collect and forward specimens of the Tsetse and other blood-sucking flies, to report their appearance in any district, and to notify any cases of disease in stock which may be reasonably attributed to the bite of these insects.

THE GENERAL CHARACTERS OF THE TSETSE.—The following description taken largely from the valuable "Monograph of the Tsetse Flies," by E. E. Austen, is given to enable the reader who has no practical knowledge of the fly to recognise a specimen at sight.

"Tsetse may be described as ordinary-looking sombre brownish or greyish brown flies, varying in length from $3\frac{1}{2}$ to $4\frac{2}{3}$ lines in the case of *Glossina morsitans*, to about $5\frac{1}{2}$ lines in that of *Gl. fusca* or *longipennis*, with a prominent proboscis in all species (of which seven are at present known). The hinder half of the body, or abdomen, in the best known species, though not in all, is of a paler colour, and marked with sharply defined dark brown bands, which are interrupted in the middle line. The abdomen is invisible when the insect is at rest, as it is then concealed by the wings of a brownish colour, which lie closed flat over one another down the back, like the blades of a pair

of scissors, while the proboscis projects horizontally in front of the head."

Measured roughly from the tip of the proboscis to the end of the closed wings, the length of the *Glossina morsitans* (the commonest Tsetse Fly in this country) is about half an inch, that of the *Glossina fusca* about three quarters of an inch.

"Apart from the prominent proboscis and the mode of carrying the wings when at rest, there is nothing in any way remarkable or striking about the appearance of the Tsetse," consequently several other blood sucking flies may be readily mistaken for it. Any suspected fly, therefore, should be sent to the Veterinary Department for identification.

WHERE TSETSE FLIES ARE USUALLY FOUND.—The Tsetse is not found everywhere in this country, but is confined to definite tracts which are known as "fly belts." Information is required as to the limits of these belts, and as to the factors which determine the shifting of these belts from one locality to another. Austen says:—

"Although the Tsetse is probably dependent upon the blood of wild animals for its continued existence, all recent evidence goes to show that the most important element is the physical character of the locality. As a general rule, it may be said that the Tsetse is confined to damp, hot, low-lying localities, either on the borders of rivers or lakes, or at any rate not far from water. Cover in the shape of more or less thick bush or forest is essential, and the fly is not found on open grass plains."

FLY BELTS.—"Although along the courses of rivers, or in the low country bordering a coast line, fly-belts may extend for hundreds of miles, varying greatly in width according to the nature of the country, it does not follow that Tsetse flies are to be met with at every point throughout the extent of the belt. More usually they are confined to particular patches of forest or bush, the area of which may be quite small.

"Just as the worst patches of fly within the limits of a fly belt are often sharply defined, so in a large tract infested by Tsetse there may be small areas which for some reason, perhaps owing to their having been cleared of bush, the fly never enters.

"These spots form veritable harbours of refuge for the traveller who may be compelled to cross the fly-belt with oxen and horses, since, by travelling at night and taking

care to keep the animals within an asylum of this kind during the day, the dangerous zone may be traversed in comparative safety."

ASSOCIATION OF TSETSE WITH BIG GAME.—It is pretty generally held that, "were it not for the big game, on the blood of which it feeds, the Tsetse would soon cease to exist, at least in numbers sufficient to be formidable."

"Whether the Tsetse is more partial to or more dependent upon one species of game than another is doubtful, although the majority of writers have stated that it is especially associated with the buffalo."

This is a question of the greatest practical importance, which the recorded experience of observers will help to solve.

SEASONABLE PREVALENCE.—Information is required as to the relative prevalence of the fly during the various seasons of the year, and the circumstances which determine its presence and disappearance.

Although it is generally held that the "Tsetse" does not begin to be active until the sun grows hot, and cattle owners take advantage of the fact of travelling with their animals through fly-belts at night, some difference of opinion seems to exist as to the time at which the insect becomes most active and aggressive.

One authority states that he considers it "dangerous to travel at night with cattle and horses, until it begins to grow cold towards the middle of the night," and states that he has been bitten often until past 11 p.m.

REPRODUCTION.—According to Colonel Bruce:—"The Tsetse-fly does not lay eggs as do the majority of the Diptera, but extrudes a yellow coloured lava nearly as large as the abdomen of the mother. This larva is furnished with a black hood at one pole and two minute spikes at the other. It is annulated, and consists of ten segments. Immediately on being born the larva creeps about with a good deal of activity, eventually searching for some hole or cover in which to hide. Having found a resting place, it immediately begins to change colour, and after a few hours has turned into a jet black hard pupa or nympha.

"If these pupal cases are placed in a perfectly dry place, as in a wooden box, the perfect insect hatches out in about six weeks. From this it would appear that the life history of this species of fly is very simple, it only being



Fig. 1.

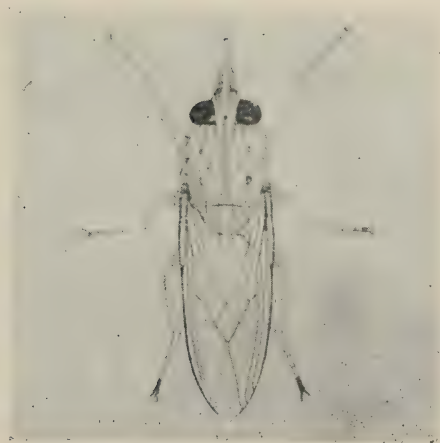


Fig. 2.

Fig. 1.—*Glossina morsitans* (enlarged).

Fig. 2.—Diagram of Tsetse Fly, showing veins of Wings.



Fig. 3.



Fig. 4.

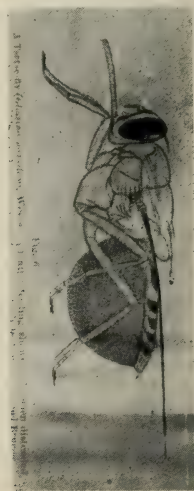


Fig. 5.

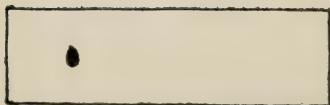


Fig. 6.

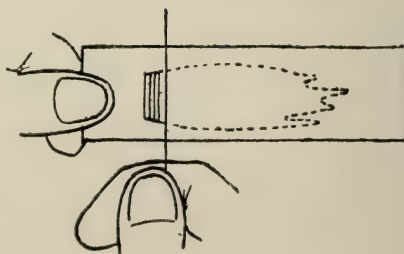


Fig. 7.

Fig. 3.—Tsetse Fly in resting position, showing portion of Wings.
 Figs. 4 and 5.—Tsetse Fly, showing abdomen before and after feeding.
 Fig. 6.—Drop of blood on glass. (For blood smear.)
 Fig. 7.—Same drop of blood spread out into a thin film.

necessary for the female insect to deposit the larva on the surface of the soil or in the grass, when the larva creeps into the nearest shelter, in a few hours becomes hard and black, and in five or six weeks hatches out into a fully developed Tsetse-fly. It has often been surmised that this fly is bred in buffalo-dung, but from a consideration of the foregoing facts it is evident that nothing is wanted except any moderately dry place."

THE DISEASE.—The disease inoculated by the "Tsetse-fly" (*Gl. morsitans*) is called "Nagana" or simply "Tsetse-fly disease"; while an animal that has been infected is described as "fly-struck."

A large number of species of mammals are susceptible to the disease, but, fortunately, man is refractory. A certain number of species, living in the wild state, appear to have great tolerance, for they can harbour the parasite in their blood without being inconvenienced thereby. Birds are practically resistant.

The time which elapses between the inoculation and the appearance of the parasites in the blood varies with the species of animal. The duration of the disease varies greatly with the animal species, thus:—

1. It runs an acute course in the mouse, rat, dog and monkey.
2. A sub-acute course in the rabbit, equine and pig.
3. And a chronic course in cattle, goats and sheep.

That is to say, a dog sick of the disease dies with extreme rapidity, while in the horse, after an incubation course of about ten days, symptoms become manifest and death may occur in from fifteen days to two or three months.

In bovidæ great differences are met with, some dying within a week of contracting the disease, many within a month, and others may linger on for six months or longer. It is a common thing for fly-struck cattle to live during the dry season and die with the first rains.

SYMPTOMS.—Equines suffering from nagana may show, during the course of the disease, a number of characteristic symptoms as recorded by Bruce:—

"The first symptoms of a horse being affected by nagana is that his coat stares, and there is a watery discharge from the eyes and nose. Shortly afterwards a slight swelling under the belly or puffiness of the sheath may be noticed, and the animal falls off in condition. The

hind extremities also tend to become swollen, and the various swellings fluctuate, one day being considerable, another day less marked, or having disappeared. During the time the animal is becoming more and more emaciated; he looks dull and hangs his head; his coat still stares, becomes harsh and thin in places; the mucous membranes of the eyes and gums are pale, and probably a slight milkiess of the cornea of the eyes is observable. In several cases, and in the last stages, the horse presents a miserable appearance. He is a mere scarecrow covered with rough harsh hair, which has fallen off in places. His hind extremities and sheath may be more or less swollen, sometimes to a great extent, and he may become quite blind. At last he falls down, unable to rise, his breathing becomes shallower, and he dies exhausted. During his illness he has shown no signs of pain, and up to the last day has had a fairly good appetite."

BOVIDÆ.—"The general symptoms in cattle are less marked than in horses or dogs. They gradually waste away; the hair, at first harsh and staring, tends to fall off, there is the same trickling of a watery fluid from the eyes and nose, and a tendency to diarrhœa. In many cases the dewlap becomes swollen and baggy."

The disease is accompanied by occasional rises of temperature, which seem related to the number of parasites present in the blood.

POST-MORTEM.—Very few well marked changes are met with on post-mortem examination; enlargement of the spleen is perhaps the most marked lesion. There is generally some gelatinous infiltration under the skin and mucous membranes and between the muscles, and a quantity of fluid in the heart sac and the lung and abdominal cavities.

THE BLOOD.—In addition to the history and external symptoms of the case we have another means of determining whether sick animals are suffering from "Tsetse-fly disease," namely, by the microscopic examination of the blood. By this means the causal parasite may be seen at different stages of the disease, although it is not always visible. Blood smears should, therefore, be taken in the following manner.

HOW TO SEND BLOOD SMEARS FOR DIAGNOSIS.—When a beast is suspected to be suffering from "Nagana," blood should be taken and sent at the greatest despatch to the

office of the Government Veterinary Bacteriologist, Salisbury.

(a) From a Dead Animal.—The whole of the ear of the animal may be cut off and wrapped in an antiseptic cloth and sent for examination. If the time before the specimen can reach the Veterinary Bacteriologist's is likely to be long, it is better to collect a small drop of blood from the cut ear, spleen or kidney, on a piece of flat clean glass, so that a thin film is formed. The film should be so thin that it will rapidly dry in the sun. Having wrapped the glass in soft material it is ready for despatch.

(b) From the Living Animal.—The hair from the edge of the ear should be clipped off and the ear washed and dried. The edge of the ear should be cut with a clean pair of scissors or knife. After a little blood has escaped, a drop should be collected on the glass and spread out in a thin film as stated in the foregoing paragraph. Several labelled preparations should be sent from each case. The thinner the film the better for examination.

(c) Slides should be taken and sent every few days.

TRYPANOSOMA DIMORPHON.—A few years ago two investigators, Dutton and Todd, found that a disease of horses in Gambia was caused by a blood parasite which they called "Trypanosoma Dimorphon." Microscopically this parasite presented certain differences to the "Trypanosoma brucei," the causal parasite of "Nagana." Later it was found that this trypanosome not only affected horses in Gambia, but also cattle and other animals throughout a wide area in Central Africa. Last year it was detected in cattle at Broken Hill, and since then has been found in the blood of sick animals in parts of Southern Rhodesia. The symptoms of the disease caused by the "Trypanosoma dimorphon" are practically identical with those seen in "Nagana," except that swelling of the limbs and paralysis of the hind quarters are not so commonly present.

It has been suggested that this parasite may be transmitted from the sick animal to the healthy by flies other than the "Tsetse" (*Glossina morsitans*). Although this theory has not been definitely proved, it is necessary to make provision against such a contingency, and it is hoped that the public will assist in collecting and forwarding specimens of all blood sucking flies which come to their notice, especially those found on animals in districts where "Nagana" is thought to exist.

Some Notes on Forestry in Rhodesia.

By W. E. DOWSETT, Matopos.

The first thing to consider in laying out plantations is the site on which it is intended to commence operations—it is a great mistake when laying out plantations on farms to select ground that can be utilized to better advantage for cropping or perhaps for an orchard. On most farms in the country there will be found ground that is useless for either of these purposes, but will well repay the time and expense expended if put under trees of suitable varieties—thus making a valuable asset of what would otherwise be waste land.

It will not be out of place to mention a few advantages to be derived from planting up what is otherwise useless ground. To begin with, a forest is a most prolific producer of humus, organic material derived from vegetation, and created by the trees from materials taken up in solution by the roots from the soil and absorbed by the leaves from the air, gradually accumulated from the decay of the leaves or of the trees themselves. This humus absorbs water with avidity, and retains it with tenacity; it is partly on this account that vegetable mould (or humus) when mixed with other soils tends to impart fertility by retaining moisture within the reach of vegetation.

Again it will be seen on most slopes or hillsides that the ground has been scoured out by the heavy rains, and we must remember that every year is making these deeper and that our soil is being not only drained of its natural sap, but is bodily taken away, and this is the top soil that contains the humus or vegetable mould, so that we are losing the most valuable constituents. About the cheapest and most effectual manner of preventing this deterioration is to plant a few belts of trees across the slope; in a little time the roots spread out and hold the soil. If the dongas are deep, cut some branches from any trees and build up level to the top of the sides of the donga; this will be the means of catching all odds and ends that may come down with the water, and will form a dyke, and it will be found that the soil will accumulate at the back of these walls and will in time fill up the dongas, the water that has hitherto wasted away will be thrown on to the surrounding ground, and the belts of trees will prevent the scouring-out process from being renewed.

The effects of forests upon the rain that falls upon them may next be considered. The air within the woods is always more humid and the surface is always shaded from the sun and sheltered from the winds; it is also generally covered with a layer of dead leaves and branches, so that the rain that reaches the earth, although it may be rather less in amount—on account of a certain proportion being retained by the leaves of the trees—is more in effect because it is not readily evaporated; it sinks into the ground instead of running off on the surface. The neighbouring streams may swell after a storm, but more gradually than on treeless areas, and they will subside again more slowly, while greater proportion is retained for future use.

Springs in a wooded region are well known to have a much more uniform supply of water than those in a bare locality, and it has been observed that the clearing of trees has caused streams to dry up, and upon the ground being replanted these streams have again become well supplied with water; it is therefore essential to keep the ground upon which we are dependent for our water supply wooded and the streams shaded.

Belts should be planted to counteract the drying effects of the wind; these should be planted across the direction from whence the prevailing winds blow.

Turning to the disadvantages and dangers of clearing out native forests and bush, we find history continually repeating itself. Mr. B. H. Baden-Powell, in speaking of the Administration of the Forests of India (1877) in the central, high and arid lands, says that in the worst of these there are found traces of ancient cultivation, river beds, now dry, and remains of villages. Another illustration of the effects of destroying the woodlands is found in a French Journal of Forestry* and, for comparison, is placed by its side a description of the same region only about fifty years before:—

About 1876.

“The Khanate of Bucharia presents a striking example of the consequences brought upon a country by clearings. Within a period of thirty years this was one of the most fertile regions of Central Asia, a country

About 1826.

“... The finest provinces of Tartary remain to be described, being generally known under the name of Great Bucharia. . . . The most noted and fertile of all the provinces is that of Sogd, so named from

* “Revue des Eaux et Forêts,” March, 1876, p. 93.

which, when well wooded and watered, was a terrestrial paradise. But within the last twenty-five years a mania of clearing has seized upon the inhabitants, and all the great forests have been cut away, and the little that remained was ravaged by fire during a civil war. The consequences were not long in following, and has transformed this country into a kind of arid desert. The water courses are dried up, and the irrigating canals empty. The moving sands of the desert, being no longer restrained by barriers of forests are every day gaining upon the land, and will finish by transforming it into a desert as desolate as the solitudes that separate it from Khiva."

the river that flows through it. 'For eight days,' says Iban Hankol, 'we may travel in the country of Sogd and not be out of one delicious garden. On every side villages, rich corn-fields, fruitful orchards, country houses, gardens, meadows, interspersed by rivulets, reservoirs and canals, present a most lively picture of industry and happiness. The rich valley of Sogd produces so great an abundance of grapes, melons, pears and apples, that they are exported to Persia, and even to Hindostan.' "

As an inevitable consequence of denudation the streams will swell to torrents in the rainy season, and become dry in winter. The mining industry, depending upon a uniform water supply, will share in this misfortune. Therefore it is our duty to conserve—as far as possible—all the bush and native forests in the country, and to add to these by the laying out of fresh plantations of good timber trees.

The discontinuation of the suicidal policy of taking out and not putting back something in its place should appeal to everyone who has really the future prosperity of the country at heart.

It is a simple matter to put say a few acres under trees to commence with, and every year increase the acreage until in the course of a few years quite a good sized plantation is added to the assets of the farm. Let us suppose that the farm is within reasonable distance of a mine or the railway, the farmer has a ready market for his poles and a steady supply of firewood, fencing poles, and rough building timber for the farm; Eucalypt plantations will give a steady supply by pollarding, without cutting out the main crop. An ordinary household in fairly well to do circumstances uses about 5 tons of coal—or its equivalent per year. One acre of Blue-gum copse in fair growth will yield continually ten tons (dry weight) of wood fuel per year.

In the Worcester (Cape) plantation £4,000 was made on the first crop of 60 acres, 16 years old Blue-gum (*Eucalyptus globulus*) after allowing 3 per cent. on the cost of formation and up-keep, the coppice re-growth was denser and stronger than the trees originally planted.

The following extract from a report of Mr. Hutchins (late Conservator of Forests, Cape Colony) will be of interest :—

“ Cheap timber is the prime necessity for cheap living in a civilised country, and a lowering of the price of timber should, I submit, be a cardinal point in the policy of every enlightened Government. . . . It is the duty of the Government to encourage and advise the farmers on agricultural matters. In forestry it has to do more. It is the duty of the State to itself produce the timber required. The bulk of the timber required by the nation must be produced in the State forests of the country. This is the verdict of those who have studied the social economy of the matter in the Universities of Europe. It is a verdict that may be slighted, but cannot be gainsaid. If slighted, the penalty has to be paid. England to-day pays £26,000,000 yearly to the foreigner for imported timber, and consoles itself with comfortable free trade maxims. This timber, it has been calculated, could be grown two or three times over on the waste lands of the British Isles. The older nations of Southern Europe have destroyed their forests, and suffer from chronic poverty and a deteriorated climate. The United States of America have destroyed three-fourths of their splendid forest resources, utilised one-fourth, and are now getting alarmed at the forest exhaustion with which they are threatened. . . . President Roosevelt, in a recent speech, dwelt strongly on the necessity of forest resources in the making of happy homes. He described, also, the close relation between mining and forestry. Mines cannot be economically worked without abundant wood and water.”

With regard to species and varieties to be planted, I think most of those mentioned in the list appended can be relied upon to give good results. Owing to the dry winter and uncertainty of the rainy season, sowings are not as a rule successful, but a few species can be propagated by these means, viz., most of the *Acacia* family. Practically all the work must be done in the nursery first,

the seed should be sown in tins, and these placed in a house built of reeds or laths so as to protect the young seedlings from the sun and wind. As a rule the tins are covered with grass—placed a few inches above the tin—this prevents the seed being washed out, and tends to keep the soil damp; this grass should be gradually thinned out as the seedlings gain strength, until all is removed. Hard shelled seeds such as Acacias should be soaked in hot water and remain in until the water is cool, they should then be sown immediately, as if allowed to dry, their vitality is soon lost. When the seedlings are large enough, they should be transplanted either into single tins or into a pan made by cutting a paraffin tin in two (longways); each of these pans will hold 25 trees.

With regard to the ground to be planted, this should be well ploughed at the end of the rains and left fallow for the winter, then with the first rains again ploughed, harrowed and levelled; the ground is then ready for planting. This should be done by the use of a line and a stick, the stick to be the length of the proposed distance of the trees in the rows; by these means the cost of planting is brought very low; after the planting is finished it will be found necessary to cultivate the ground—both for the purpose of keeping down the weeds and to conserve the moisture; this cultivating can best be done with a horse hoe, with either a mule or a donkey, and will only be necessary (in most cases) for the first two seasons. It is not necessary to fence in the plantations unless there is a fear of cattle or goats getting in among the trees. If there is any likelihood of this happening, they must be protected.

Upon a rocky or broken surface, no attention need be given to the regularity of spaces, the most convenient spots being taken wherever found, but on a level stretch there are great advantages to be gained by planting at fixed intervals; it will be found most convenient to plant at equal distances in both directions.

As a general rule, all trees growing in an open space have a tendency to spread out laterally, and not to grow as high as when surrounded by other trees; the tendency to branch from near the ground is greater in a dry climate and in places exposed to strong winds, it is therefore the practice to plant the trees much nearer together than they would stand when full grown, and to thin them out as they become larger.



Photo by]

Bambusa vulgaris.

[Mr. W. E. Dorrsett.



Photo by]

Casuarina suberosa var. leptoclada.

[Mrs. E. Dobbin, Borrowdale.



Photo by |

Nursery at Rhodes' Matopo Park.

[Mr. W. E. Dowsett.

It is an excellent practice in the planting of valuable species to plant them in alternate rows with other trees of more rapid growth but of less value; the latter may be taken out when their shelter is no longer required, and those we wish to preserve have grown so as to soon shelter the whole of the ground.

In planting out, the tins of trees should be carried on to the field and well soaked with water, then if the trees are in single tins they can generally be removed without damage to the root system by merely inverting the tins and tapping gently on a spade handle held by the planter; if the tree be one of 25 in a tin, it can be removed by means of a trowel—care being taken not to damage any of the roots of the plants, but to cut it out with its due proportion of soil. The tree is then placed in the hole made by the planter with his spade or “cuba” and watered—this watering will help to “set” the tree.

About the best age at which conifers, *i.e.*, Pines, Cypress, Junipers, Callitris, Casuarina, etc., should be planted out is when they are two years old, and gums at about four to five months.

The cost of planting is roughly—taking as a basis the cost of labour at a shilling per diem per unit, including “skoff”—2s. per acre; assuming that six boys at 1s. will plant three acres per day, this is not by any means an unreasonable supposition.

Gums should be planted about 5 ft. by 5 ft., and Pines about 4 ft. by 4 ft.

The number of trees to an acre is as follows:—

3 ft. x 3 ft. ...	4,840	4 ft. x 6 ft. ...	1,815
3 ft. x 4 ft. ...	3,629	5 ft. x 5 ft. ...	1,742
4 ft. x 4 ft. ...	2,722	5 ft. x 6 ft. ...	1,459
4 ft. x 5 ft. ...	2,178	6 ft. x 6 ft. ...	1,210

The following list has been compiled from among the trees actually grown at the Matopos, and upon which the most favourable report can be made:—

Bambusa vulgaris.—Common bamboo, for damp localities; a handsome, strong bamboo, useful for whip stocks, ladders.

Callitris calcarata.—Cedar-like wood, very durable, does well in dry localities.

Callitris robusta: Murray cypress.—Cedar-like wood; probably the best *Callitris* for the country.

Casuarina suberosa var. *leptoclada*: Beefwood.—A handsome shade tree.

Cedrela toona: Red Cedar of Australia.—The most valuable timber tree in all Australia.

Cupressus elegans.—A cedar wood.

Dalbergia sisso: Sisu.—A first-rate timber tree, wood untouched by white ants.

E. pilularis: Black-butt or Flintwood (for damp situations, vleis, etc.)—A very fast growing tree, timber good.

E. polyanthemos. Den.—Splendid drought resister, timber very durable. Growing at Matopos and at Salisbury.

E. saligna: Saligna Gum.—Splendid wind-break, valuable timber. Good for red soils or sand.

E. tereticornis: Tereticornis Gum.—Very superior timber. Quick grower.

Juniperus Bermudiana: Pencil Cedar.—A first-rate timber tree. Good frost and drought resister.

J. Virginiana: Pencil Cedar.—Slow growing. Timber valuable. Good frost and drought resister.

Pinus Canariensis: Canary Pine.—Valuable timber. Handsome tree.

P. halepensis: Jerusalem Pine.—Good drought resister. So far the best pine up here.

Populus alba: White Poplar.—For damp situations. Splendid wind-breaks.

Robinia pseudacacia: Robinia.—Good drought and frost resister. Stems make good split fencing posts. It has been largely planted in the Karroo with great success.

The Erosion of Soil.

By LIONEL CRIPPS, Umtali.

I need make no apology for intruding this subject upon your notice, as the title I have chosen for this paper sufficiently proclaims its importance. It is not my intention to lay down the law, but, by a few timely observations and suggestions, to furnish food for thought and discussion. Let us first consider the factors, which, given time and opportunity, are capable of robbing us of the chief asset which we, as farmers and landowners, possess. The asset I refer to is the top twelve inches, more or less, of soil, which furnishes food for the native plants and the crops upon which we are dependent for our living. The principal causes of the washing away of soil are undoubtedly the torrential rains to which we are liable, and which, while bringing many blessings in their train, are also a terror and a bane to the country, and can, in a few minutes do such wholesale damage that the victims of their fury are left limp and aghast. These rains are of yearly occurrence, and must be reckoned with, not as exceptional phenomena, but as normal events which, however terrible in themselves, are unable to do damage unless assisted by the handiwork of man, who, like a prodigal, is ever ready to waste his substance. It is by overstocking and improperly tilling his land that man lends his assistance to the wind and rain, and to save himself from the ruin that can be wrought, it is necessary that he take time by the forelock and realise the truth of the old saying, that prevention is better than cure. It does not seem likely that the evils of overstocking will overwhelm us for some years to come, but it will be well for us all to look to our ways, and see that the small lots of stock we do possess do not unduly damage our pastures, but rather improve and make them ready for the trampling millions yet to come. I am not going to enlarge upon the evils of herding and kraaling, as of these all are well aware. Their effects, however, we can minimise by taking care that the stock paths do not grow too wide and deep.

Tilling of the land is one of the chief causes of loss of much valuable soil, and it is for us to think out ways and means for preventing this. It is customary, on some

farms, to cut a trench on the upper side of cultivated land to carry off storm water before it can reach loosened soil, but this plan cannot be thoroughly effective if the cultivated area is of great width, as then the rainfall on that alone is sufficient to do a great deal of damage. Speaking from experience, I would suggest that the land be cultivated in narrow strips, thirty to one hundred yards in width, according to the slope of the ground, and that, at least, six feet of virgin veld be left on the lower side of each strip. Thorough cultivation of growing crops and orchards is often recommended, as a counsel of perfection, but I feel certain that this can be overdone in this country, with resultant loss of much soil. It is better to get a smaller crop and save the soil than by thorough cultivation to endeavour to secure a larger return and lose soil that can never be replaced. It is advisable to watch used and unused roads, and to divert the rain-rush from the wheel ruts. For this purpose branches placed butt uphill in the ruts have been found very effective, as they serve the double purposes of checking the flow of water and of causing the ruts to silt up.

In conclusion, we may say that we have as a guide the experience of other countries where former fertile pastures are now howling deserts, and where the ever recurring cry of drought is the direct result of bad systems of farming, and of overstocking, causing a reckless waste of natural resources. To those who live on the Rhodesian highlands, from which the rainwater rapidly drains off, it is especially important to exercise care, to conserve our resources, and so order their farming methods that they, while getting good value out of the land, shall leave it to posterity, richer, and better worth living on than they found it.

The South African Irrigation Congress, Robertson, C.C.

At the request of the Administrator, Mr. J. A. Edmonds, President of the Southern Rhodesia Agricultural Union, visited Robertson, in the Western Province of Cape Colony, in order to represent this Territory officially. The following report of his visit will no doubt be read with interest, and his kindness in leaving his private avocations on behalf of the common good will be duly appreciated.

The Congress opened on the 18th May in the Y.M.C.A. Hall. Thirty-two delegates were elected by Farmers' Associations, eighteen by existing and proposed Irrigation Boards, and thirty-four representative people of Cape Colony were invited to attend the Congress. Seven delegates were nominated by the Transvaal Government, seven by the Orange River Colony Government, one was elected by the Agricultural Union of Natal, and one by the Rhodesian Government.

The members of the Congress were the guests of the Breede River Irrigation Board at Robertson. The excellent arrangements provided by Mr. A. G. H. Teubes, Secretary to the Congress, and the Hon. H. C. van Zyl, Chairman of the Breede River Board, being much appreciated.

The Hon. J. X. Merriman, Prime Minister, presided, and delivered the inaugural address.

Addresses of welcome were read on behalf of the Town Council and the Divisional Council, and were acknowledged by the Prime Minister.

The reading of papers occupied the attention of Congress during the day, evening sittings being held to enable delegates to discuss matters and acquire information.

The following papers were read at the Congress:—

1. Irrigation Development in the Cape Colony: Past, Present, and Future, by Mr. F. E. Kanchack, A.M.I.C.E., Director of Irrigation, C.C.
2. Paper by Mr. O. H. Oosthuisen, M.L.A.
3. Labour Colony Irrigation Settlements, by Rev. B. P. J. Marchand, B.A.

4. Physical Relations of Water to Soil, and their Applications in Agriculture, by Dr. P. H. Hahn, M.A., Ph.D.
5. The Erosion of the Veld, and the Conservation of our National Resources, by Mr. E. R. Bradfield.
6. Irrigation with special reference to Pumping Plants, by Mr. W. Ingham, M.I.C.E., M.I.M.E.
7. Brack Soils, their Cause, Cultivation and Cure, by Dr. C. F. Juritz, M.A., F.I.C.
8. Some Aids to Irrigation, by Prof. H. Payne, M.I.C.E., M.I.M.E.
9. Irrigation in the Transvaal, by the Chief Irrigation Engineer, Transvaal.

These interesting papers were much appreciated by the delegates, and gave rise to animated discussions.

On Wednesday, the 19th May, an expedition was made to the intake of the Breede River Canal Works, about six miles from Robertson. Refreshments were provided at Mr. Du Toit's farm, and the weir inspected. On the return journey the furrow was inspected, and also some "brak" land restored by drainage. The weir across the Breede River was of peculiar interest, being constructed of concrete on a sand foundation.

On Friday, the 21st May, most of the delegates left Robertson by special train for Nuy Siding. The owners of the farms in the Nuy River Valley and the members of the Nuy River Irrigation Board provided vehicles to the Nuy Valley to inspect the works constructed by the Irrigation Board under a loan from Government.

The delegates were then most sumptuously entertained at the residence of Mr. P. Rabie by the proprietors of farms in the Nuy River Valley. Time did not permit of a visit being made to the irrigation works in the Norma Kloof, also constructed by means of a Government loan.

Some interesting details were given me by Mr. Scaife, District Engineer, with regard to the Nuy River Valley Irrigation Works. These works were constructed by some thirteen farmers acting in co-operation, assisted by Government loan. The cost of the scheme was some £16,000, the canal being seventeen miles long, taking four and a half years to construct, and costing from £2 to £50 per mile.

The cost of the Breede River Works was some £12,000, the land brought under irrigation increasing in value from £2 to £60 per morgen. The soil conditions of this valley are most interesting, the lime deposits being very near the surface in places. Most of this land is under cultivation to lucerne, paddocked off, and fed by ostriches, which yield a profit of £5 per bird per annum, provided the feathers are of good quality—an acre of lucerne carrying about four birds per annum.

The calabash pipe industry draws a considerable portion of the necessary “calabash stem” from this part of the world.

The rainfall in the Robertson district averages only some 12 inches per annum, and the enterprising co-operation of the farmers of that district provides a valuable object lesson of the power of water, rightly applied, to make the desert “bloom as the rose.”

The fine horses bred in this district were a subject of great comment amongst delegates.

The control of these irrigation schemes is in the hands of the farmers themselves, who elect their own Board, and act within well defined powers.

I gathered that large State schemes were considered unworkable in South Africa, and that the smaller irrigation schemes are far more profitable than the larger ones. The proposed Ashton Canal will cost some £9 per acre, brought under water, as against some £4 per acre in the Nuy Valley Works. In America the cost works out at about 30s. per acre.

With reference to Southern Rhodesia, I am under the impression that the time is certainly ripe to consider the advisability of at once engaging the services of an officer competent to lay out irrigation schemes, to inspect and advise on boring operations; also to advise farmers generally with regard to steam engines, suction gas plants, oil engines and other machinery.

When it is possible to do so, it will be of extreme value to Rhodesia to assign funds to be applied as loans, at a small rate of interest, say $3\frac{1}{2}$ per cent., for co-operative irrigation schemes amongst farmers, as is done in the Transvaal and Cape Colony. Great advantage is being taken of the facilities offered in this direction by our neighbours of the South.

Although we have an ample rainfall in Southern Rhodesia, it is not well distributed throughout the twelve months; generally speaking we have seven months of drought. If water, by irrigation, can be at all generally applied during these periods, it will mean an enormous increase to the products of Rhodesia, in the shape of dairy produce, vegetables, fodder plants, cereals, etc.

In connection with the general discussions on irrigation, two points were considerably emphasised:—

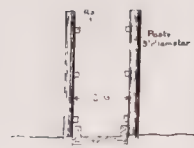
1. That far more harm was done to land and crops by an over application of water, than by under watering.
2. That refraining from grass burning means permanency of streams.

On a motion of the Hon. Dr. Smartt, it was decided to establish a permanent Irrigators' Association, in which provision has been made for the entry of Rhodesian representatives.

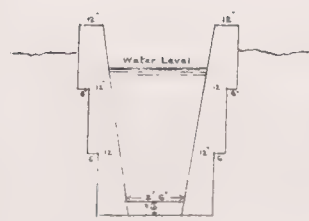
Many speakers alluded to the note of good fellowship and co-operation struck throughout the proceedings of the Congress, and the determination of all farmers, irrespective of race, to unite for the common good in the development of South Africa.

The agenda and minutes of the Congress, with the full text of all papers read, and notes of the discussions, will be printed in English and Dutch, and available shortly.

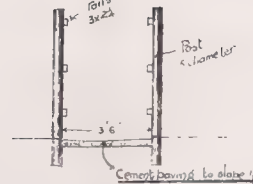
PLAN OF DIPPING TANK.



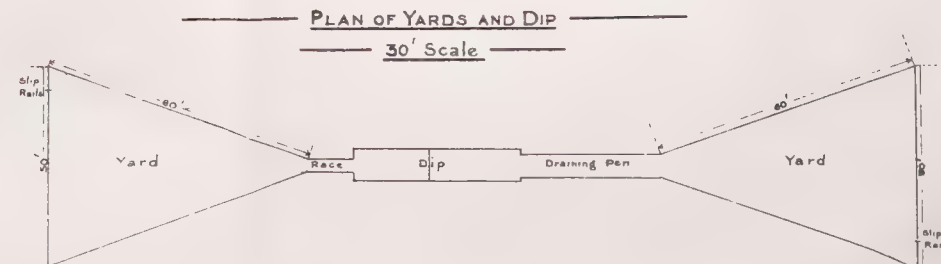
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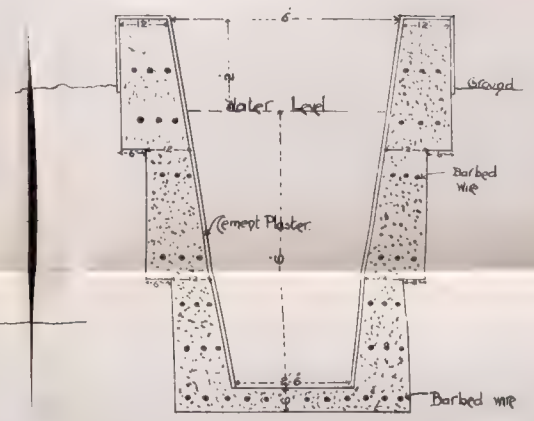
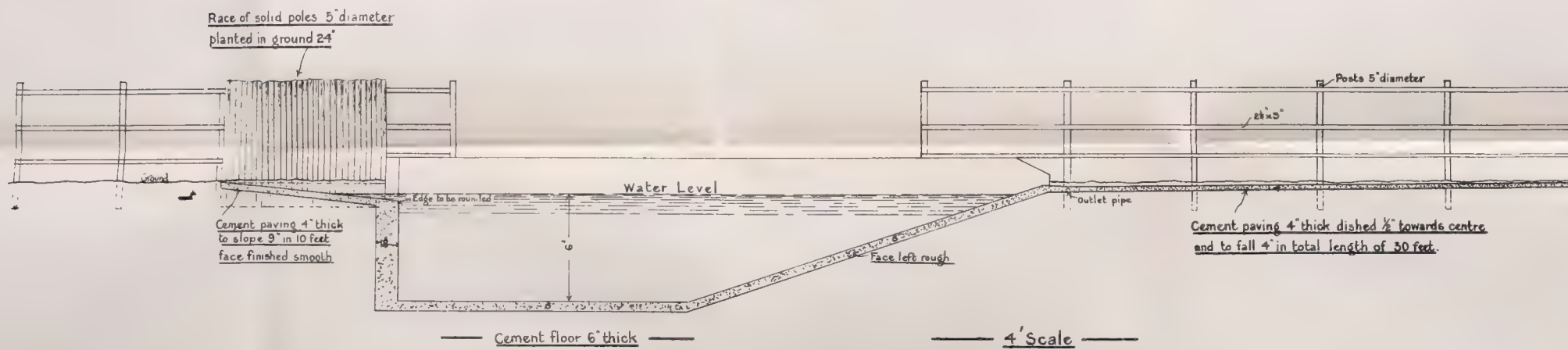
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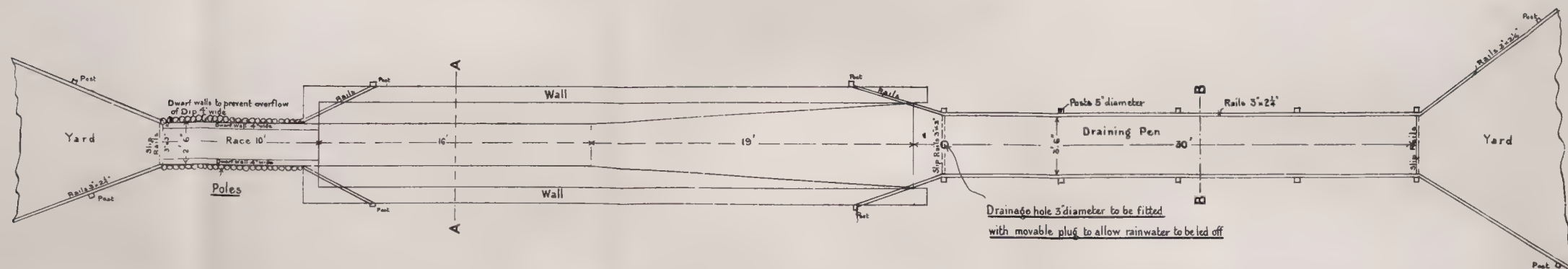
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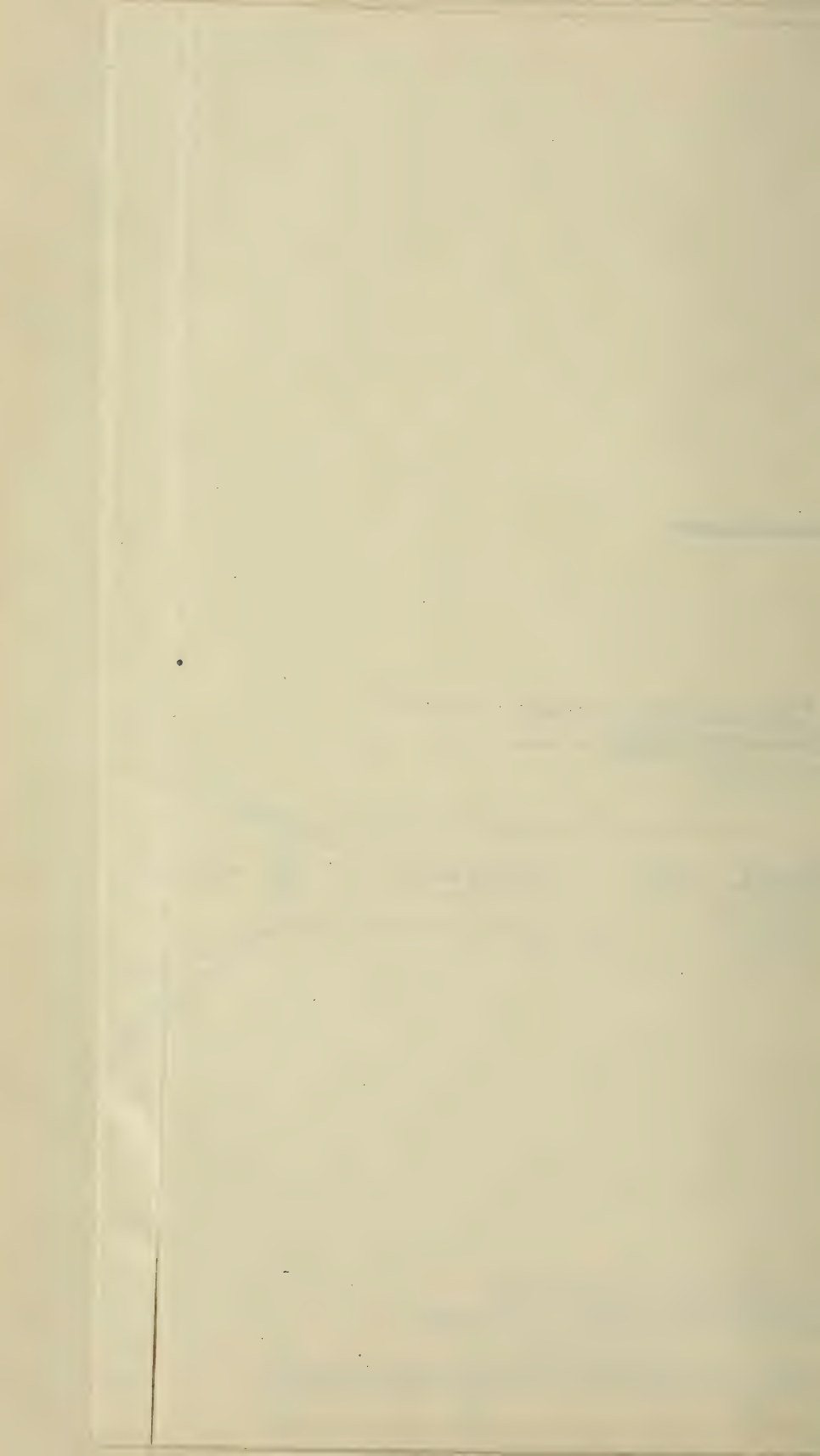


PLAN OF YARDS AND DIP
30' Scale



Enlarged Section through Dip
1/2" Scale





Dipping and Spraying of Cattle.

By THE EDITOR.

Following on the article by Mr. Edmonds, G.V.S., which appeared in our June issue, some interesting contributions have reached us on the question of the best means of eradicating ticks, and as these are all closely related, it has been thought best to continue them under one head. A defence of the system of spraying is given the first place, details follow for the construction of dipping tanks, towards which a Government grant may be given, and finally some particulars are given of a modification in the construction of tanks for which several advantages are claimed, and which certainly deserves careful watching and every encouragement. The case against spraying having been given in the article above referred to, it is but right to hear Mr. Stirling, G.V.S., of Umtali, for the defence.

SUCCESSFUL SPRAYING.—I have read with pleasure the article on ticks and their destruction, from a report by Mr. C. R. Edmonds, G.V.S., Bulawayo, in the June number of the Journal, and would like to make a few remarks in this connection. During the past fifteen months most of my time has been spent in dealing with temperature camps for the eradication of African Coast Fever, and I have gained a certain amount of experience with regard to spraying of cattle for the destruction of ticks and its efficacy or otherwise. My experience goes to prove that spraying, if properly carried out, is a perfectly satisfactory method of destroying ticks, but it must be done thoroughly. In 1908 I was in charge of a temperature camp at Forest Farm, Umtali, and there had a herd of over 400 head, all rather badly infested with ticks, but within three weeks of commencing operations it would have been difficult, without a very careful examination, to discover living ticks on any one of the cattle.

The method adopted was as follows: The material used was Cooper's sheep dip, in the strength of one packet to 18 gallons of water, mixed according to directions on the packet.

TIME BETWEEN SPRAYING.—The second spraying was done after seven days' interval, the third at ten, and after that at intervals of a fortnight, and I think that the last interval could be increased to three weeks on a farm where spraying had been done for some considerable time.

A crush pen was erected at the gate of the kraal sufficient to hold five head of cattle for temperature taking, and into this four head were driven, thus allowing the animals to turn round with ease and present every portion of their bodies to the sprays, which were worked at two sides of the pen. After the cessation of the spraying, the animals remained in the pen for the space of about three minutes, and were then liberated on to a clearing near the kraal. This ground had previously been scuffled, and all green stuff removed from it, and there they stood until thoroughly dry.

The one great objection I found was the amount of material that was wasted, and which formed a muddy mixture on the ground of the pen. In order to obviate this I had the pen reconstructed with a decided slope from side to side in the direction of a channel, which carried all the superfluous material to a deep hole dug out at the side of the pen. When the spraying was finished, the hole was covered in and protected, so that the cattle were prevented from even licking the ground on which dip had fallen.

Now Mr. Edmonds in his excellent article mentions three objections to spraying as a method of tick destruction.

(1) WASTE OF DIPPING MATERIAL.—I do not think that this would amount to a great deal if the farmer built a good permanent pen with a brick and dagga floor and with a channel carrying the dip out of the pen and into a receptacle placed in the pit, and used again after the dirt, etc., was allowed to settle so that the super-imposed fluid could be run off free from material likely to interfere with the working of the pump.

(2) TIME REQUIRED AND THE NUMBER OF HANDS.—Giving six minutes to each lot of four cattle it means about $2\frac{1}{2}$ hours for 100 head, and as a saving of time it would be easy to erect two pens with a passage way between them in which one spray pump could be worked four or five hours once a fortnight or three weeks, is not too much time to spend in order to keep a herd of 200 head clean

from ticks and free from the results that these may bring about. With regard to the number of hands, I found that it was easy to spray 400 head with six boys.

(3) COST OF SPRAY PUMP OWING TO THE DIFFERENT PARTS GETTING OUT OF ORDER.—I may have been fortunate, but the only inconvenience that I ever suffered was from the perishing of the rubber tubing, a matter easily remedied.

I must express my thanks to Mr. Edmonds for bringing the matter of tick destruction before the public, and I hope that farmers will be encouraged to express their views as to the methods they have found most satisfactory. It is only by discussion of such articles as Mr. Edmonds has written that both the farmers and the Department will gain experience in what I regard as a most urgent detail in satisfactory cattle breeding.

The chief point to notice in the foregoing remarks is that the spraying must be done thoroughly. In practice we find too often where spraying is insisted upon by law that it is carried out in a perfunctory fashion, and the system blamed for what is the fault only of those who have scamped their work. The converse is of course true, and cases of injury to the skin of the animal from over severe spraying is not uncommon. On the other hand, the plunge cannot fail to be effective, but the charge of causing death is often brought, unfairly however, not only to all the ticks, but to the cattle as well. Dipping has, it must not be forgotten, become the recognised method of tick destruction throughout the Cape Colony, Natal, Orange River Colony, and Transvaal, where pure arsenite of soda is often used in place of the proprietary dips, in which of course arsenic is the principle ingredient. Where only a few years back the idea of dipping was scorned and ridiculed, it is now universally practised, and with the best results.

THE CONSTRUCTION OF DIPPING TANKS FOR CATTLE.—To encourage the construction of dipping tanks, the Government of Southern Rhodesia grants financial aid to the extent of half the cost, but not exceeding £50 in any one instance. Applications for this assistance should be addressed to the Director of Agriculture, Salisbury. The following particulars have been kindly prepared by the

Public Works Department, and may be regarded as furnishing a model estimate of the specifications of work to be done and materials to be used in the construction of a dipping tank on the lines of the accompanying drawings.

CEMENT.—The cement to be Portland and of the best quality (White Bros. preferred).

POSTS.—The posts for race and yards to be Mopani or Mahobohobo if procurable, to be not less than 5 in. in diameter at the small end, stripped of bark and well carbolineumed before fixing. The posts must be dressed quite clean to prevent injury to cattle.

STONE.—Stone for concrete to be the best clean granite or quartz, no stone to be larger than will pass through a 2 in. ring (any way). If quartz rubble is used, it must be thoroughly well washed before mixing.

WATER.—Water to be clean and free from organic impurities.

SAND.—Sand to be the best clean sharp granite grit, to be free from loam or vegetable matter, and if necessary to be thoroughly well washed before using.

WIRE.—Wire to be four barb, two ply, with barbs 6 in. apart.

RAILS.—Rails to be deal, clean and free from knots and splints. Native timber may be used for rails wherever procurable, but it must be perfectly straight and quite free from knobs or projections that might cause injury to animals.

EXCAVATION.—Excavate for tank to the dimensions shown on drawings. No more ground must be taken out than is actually necessary. Remove all surplus soils and spread where directed. Before commencing to lay concrete, the bottom of all excavations must be well watered and well rammed. Well ram all round the walls of tank as the work proceeds.

CONCRETE.—The whole of the materials to be accurately measured in boxes or empty cement casks. The concrete to be composed of five parts broken stone, three parts good sharp sand, and one of cement, to be turned over twice in a dry state, and twice in a wet state, and when laid in place to be thoroughly well rammed. The concrete must be mixed on a wooden platform, and not on the

bare ground. The water must not be thrown on in buckets, but be sprinkled on through a fine rose. The two sides and ends of the tank must be completed first, and the floors laid last of all. In mixing concrete old material must not be incorporated in the new mixing. The concrete must be laid down immediately after mixing. All concrete must be laid in boxes made with $1\frac{1}{2}$ in. boards, and no layer must exceed twelve inches in height. Every old layer must be well wetted before commencing to lay fresh concrete. Lay barbed wires in the position shown on section, to run right round the tank, and all to unite, top, bottom, and side wires.

The surface of floor in race, in draining pen, and bottom of tank must be floated up with one of cement to three of sharp sand, to be well trowelled and brought to a smooth fine face. The edge of floor of race, at entrance of tank, must be rounded. The surface of slope leading out of tank is to be finished rough, for foothold for cattle, by raking up the surface after ramming. The floor of draining pen must be 4 in. thick at the sides, and to slope $\frac{1}{2}$ in. towards the centre. Near the entrance to tank leave a hole in the floor of draining pen, to be 3 in. in diameter, fitted with a 2 in. outlet pipe. Fit a wooden plug with an iron top and ring. The plug must be left in place when dipping, and should be removed during rains to prevent rain water running into the tank. On each side of the race lay a dwarf wall of concrete, to be 4 in. wide, to prevent dip washing over the floor of race when cattle enter the tank. The wall will start from ground level, and will be 9 in. high at the end near tank. After completion, plaster the whole of the walls of tank inside and out with one of cement and three of sharp sand, steel trowelled, to be not less than $\frac{1}{2}$ in. thick, walls well wetted before plastering.

All concrete must be kept well watered as the work proceeds, and all walls to be well wetted for a week after completion. The floors of tank, race and draining pen must be covered with wet sand for 14 days after completion. The floors of race and draining pen must be V jointed diagonally from the centre to sides every 18 inches, joints $\frac{1}{4}$ in. deep. All concrete must be thoroughly well rammed and kept wet as the work proceeds. The concrete must be laid as quickly as possible, and the whole of the materials must be on the ground before commencing to mix concrete. All concrete must be mixed under supervision,

and the contractor must give due notice of his intention to lay same before commencing work.

FENCING.—The whole of the posts must be of Mopani or Mohobohobo, to be not less than 5 in. diameter at the small end, stripped of bark, and well carbolineumed before fixing. The race will be of solid poles, planted as close together as possible, let into the ground two feet and well rammed. Posts for yards to be not more than 10 feet from centre to centre, let into ground 18 inches, and well rammed. All posts must be 6 feet above the ground, and free from knobs or projections.

Well spike to posts round the whole of the yards and enclosures, three 3 in. by $2\frac{1}{4}$ in. rails, to be the distance apart shown, all well carbolineumed before fixing.

Fix three 3 in. by 3 in. slip rails where shown on plans, to be fixed in strong wire loops well stapled to posts. All posts should be sound and free from heart shakes. Fix rails diagonally across the ends of the tank where shown on plan to prevent animals jumping on to wall of tank.

Quantities of materials required for a tank as above described:—

One piece of 2 in. pipe, 6 ft. long.

Rails, 6—12 3 x $2\frac{1}{4}$

do. 12—14 3 x $2\frac{1}{4}$

do. 48—20 3 x $2\frac{1}{4}$

Slip rails, 6—10 3 x 3

do. 3—15 3 x 3

(Native wood may be used in the place of imported timber.)

80 posts 5 in. diameter, 7 ft. 6 in. long.

30 posts 5 in. diameter, 8 ft. long.

$1\frac{1}{2}$ coils barbed wire.

15 gallons Carbolineum.

50 lbs. 5 in. spikes.

33 casks cement.

25 cubic yards broken stone.

18 cubic yards sand.

It should be well understood that these particulars are meant only as a general guide, especially as regards strength and dimensions, but it is not intended to regard

rigid adherence thereto, as a *sine qua non* of securing the grant in aid. This may, however, be regarded as a minimum for this type of tank, and an admitted improvement would be no doubt to have the swim longer, so as to ensure saturation of the coat and destruction of the ticks.

THE EDMONDS DIPPING TANK.—An attempt to combine the advantages, and overcome the drawbacks of both methods has quite lately been devised and named after its inventor, Mr. Edmonds, M.R.C.V.S., of Bulawayo, who seeks no patent rights, but courts a trial, and welcomes improvements on his original idea. To this end a full-sized working model was exhibited at the recent Agricultural Show at Bulawayo, which was reported upon by a committee, consisting of the Director of Agriculture, the Chief Veterinary Surgeon, Messrs. McLaurin, Partridge, J. A. Edmonds, Woods, Fleming, King, W. G. Mason, and Major Gordon, to the following effect:—

We, the Committee appointed to report upon the Edmonds Dipping Tank, have examined this contrivance, and desire to express approval of the system as one well suited to the needs of Southern Rhodesia, where economy in construction and dipping material is a more urgent need than rapidity of handling stock.

We regard this method as likely to be a great saving in prime cost and in use, and commend it for its simplicity.

It is suited to all sorts of stock, for cows in calf, and for treating the feet only in cases of foot rot or the like, with modifications for sheep dipping, while we consider there is less likelihood of animals taking poison internally by this process than the usual method.

The Committee is given to understand that if the metal tank as exhibited be coated with tar inside and out once a year it should last seven years, and that in actual use an upcast filter will be supplied to the reservoir, which will also be placed higher, so as to give a greater pressure to the spray, and that spraying nozzles will be fitted to the hose pipes.

It is considered that a tank with a capacity of 600 gallons—a great reduction on that of the plunge tank—should suffice, while as possible improvement it is suggested that the breadth of the floor be reduced to 18 inches, while maintaining the present width at the top, and the slope

at the entrance be made less steep. Modifications in the arrangement of the filters, tanks, and gate are possible.

To contain one animal at a time the tank may be made 8 inches shorter than that inspected; if 3 feet longer it could hold two head at once.

The durability of the structure has yet to be proved, and it is regretted that a price has not been given as a guide for comparison, but it is probably less than half that of tanks as at present built, even if the tank be made of concrete in place of metal, which is quite feasible where this material is preferred.

In actual operation the dip was demonstrated to work effectively and quite satisfactorily.

While commending the idea as an excellent one, and likely to prove a boon to farmers in Southern Rhodesia, we suggest that trials be made with various dipping preparations under this new system.

The dipping tank above referred to was constructed by Messrs. Felgate & Co., Selbaine Avenue, Bulawayo, and may be briefly described as, consisting of a tank of 20 gauge iron, strengthened with D-shaped ribs every 15 inches, of a total length of 30 feet, of which 12 feet at each end were occupied by slopes, the central 6 feet representing the level floor of the tank, the depth of which was 4 feet 6 inches. The width at the top was 4 feet, and at the bottom 2 feet. The whole floor supported a wooden frame, on which rested a cocoanut mat to serve as a filter when the dipping fluid should be drained off. A second, and upcast, filter was fitted in a tank placed at an elevation of some 10 feet above ground, to hold 600 gallons of dip. The animal to be treated walks down into the tank, where it stands chest deep in the fluid while two sprays play upon its head, sides and tail, with pressure derived from the tank above. From experience gained from this first attempt, it is proposed further to experiment with the system, and to erect other tanks on the same lines, but with the alterations indicated in the above recommendations of the Committee. We publish drawings of an experimental tank on these lines to be erected on Arlington, the farm of Mr. W. H. Brown, M.L.C., near Salisbury. The material used is concrete throughout, the filter instead of extending along the floor is placed at one side, the dimensions are amended, and the spraying is done by means of a force pump in place of the overhead tank.

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Improved "Edmonds" Dipping Tank.

1" SCALE.

A. Maclean.
Salisbury, July 12th, 1909.



Section C.D.



Section A.B.

Draining Pen.



Enlarged Section C.D.

1" SCALE.

Sheep Dipping Fluid.

Cattle Dipping Fluid.

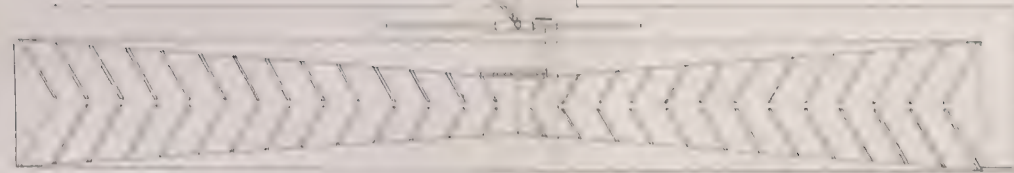
C.

B.

D.

PLAN.

28' 0"



Filtration of the dipping fluid, the use of much less at a time, avoidance of the plunge and economy of construction, and by the use of two storage tanks, its use for both cattle and sheep dips are the merits claimed, and while likely to be realised, it yet remains to be seen from actual use how far this process is in advance on the recognised methods of dipping or spraying. Messrs. McLaurin and J. A. Edmonds, of Salisbury, are so favourably impressed with the idea that they both meditate erecting tanks on these lines. This enterprise is to be commended, and the results will be looked forward to with much interest. Should it prove successful, the method will go far to solve the problem of tick destruction in small herds, and by private individuals on their own farms, and the era of universal dipping will have been brought sensibly nearer.

Hedges for Farm and Garden.

By C. E. F. ALLEN, Agricultural Assistant..

The known varieties of good hedge plants for this country are only a few. A great deal is asked of a plant to become an ideal one for this purpose, and a few respond efficiently. It is a fairly conspicuous fact in many of our suburban gardens that hedges are not given sufficient attention, and unless improvements are effected in this direction, poor results will continue to be common. Well trimmed hedges and lawns planted with stately specimen trees can only be possessed by the keen gardener, who spares no trouble in attending to his plants.

On the farm live hedges will only be possible on a large scale when the farmer has the development of his lands well in hand, and can keep fire paths cut at the beginning of each dry season. Hedges round his paddocks and homestead are, however, easily cared for.

The qualities that go towards the making of a hedge-plant are as follows: It should be white-ant resistant, drought resistant, wholly, or almost wholly evergreen, a moderately fast and even grower, with a not too spreading root system, compact in character, sturdy in growth so as

to obstruct trespassers, and be a long lived, and lastly, though perhaps not the least desirable virtue, it should be a good thing to look at.

A flowering hedge is an immense asset to the suburban garden. I do not remember any more beautiful hedges in the gardens of England than those of the *Plumbago capensis*, to be seen at Cape Town, when the delicate blue blooms, still spoken of as Rhodes's favourite flowers, are in full bloom. This plant is essentially suited for garden planting, and with care should make good growth in the higher parts of this country.

Another garden hedge plant is the *Duranta*, both blue and white flowering varieties. In the Punjaub of India this is more common than any other plant, and is highly ornamental. At the Victoria Falls it grows well, but requires a good deal of care during the dry season, and would probably only grow well in sheltered parts. It is a valuable plant in a colour scheme, as the flowering period extends over two months. Once a hedge is established, cuttings are easily rooted for future planting. In the initial planting, seed would have to be obtained; this germinates freely, but the growth is slow. Cuttings which root freely, and make good growth are therefore the better means of propagation, once sufficient material is to hand. These two plants can be kept down to a hedge of from 3 to 5 feet in height. A larger garden hedge can be made with the Flamboyant, *Poinciana regia* (the flame tree of the West Indies), so called from the scarlet flowers produced in profusion, which, although a tree of from 30 to 40 feet in many countries, does not generally grow to more than 20 feet with us. *Poinciana pulcherrima*, a smaller species of this genus, is perhaps more suitable, as it never reaches the same dimensions as the Flamboyant. Plants raised from seed in this country flower in two years from sowing, and when not in flower the feathery leaves make a handsome hedge. It also has an enhanced value in being naturally free from pests.

Several varieties of the Mulberry are in use as hedge plants in Rhodesia, but their spreading, untidy habit, does not recommend them for garden planting. On the farm, however, they are useful. The cuttings put in during the rains, December and January, root readily, and grow freely, and in two to three years make good wind breaks, and provide useful sticks for a variety of purposes on the

farm. In planting Mulberry hedges I should recommend planting at least two rows, and even three at a distance of 4 x 4 feet in the rows and between. In a bad season it is difficult to keep the stock from eating the young shoots of this plant, which should be at any rate a further encouragement to the stock owner to plant it.

I have not yet mentioned a hedge that will keep out intruders on a farm, but I have in mind a plant that commends itself for this purpose, that is the Kei Apple, *Zizyphus jujuba*, a very thorny fast growing, though fairly compact shrub, a native of the West Indies, and probably also of South Africa. I have planted this bush in this country, and it reached a height of 8 feet in three years. No ox could penetrate a hedge of this bush once it has developed. A paddock enclosed with it would be at least an improvement on the barbed wire enclosures that are generally used. Another benefit derived would be the shelter from the winds, and a more pronounced feeling of security to the cattle. The fruit also makes a delicious jelly.

A hedge plant that recommends itself to the writer is the Mazoe lemon; plants of this are easily obtained in the Salisbury district from seed. It would make a high, bold hedge, and be always evergreen, and if the situation suited its growth, would be indeed difficult to beat. The Lime, *Citrus medica*, is largely used in India as a garden hedge.

A further form of hedge which would probably be only practical in small paddocks is obtained by placing poles of certain varieties of the indigenous trees of the country close together, which take root and grow into a permanent live hedge.

There are several species of *ficus* which are said to have this rather extraordinary degree of vitality. I have not actually seen these growing, but two trees common in Matabeleland have this quality: one is *Pterocarpus angolensis*, the "Mookwa" of Barotseland, and the other is *Ricinodendron Rautanenii*, the "Mongongo" tree which bears an edible nut, the shells of which are used in paving the floors of Native and European huts in North-West Rhodesia. A fence of this character can, as a rule, only be recommended in those parts of the country where the farmer is fighting against the heavy growth of bush for land in which he can work the plough, and there are likely in the future to be more farmers in this predicament as

the open lands become tenanted, and new-comers are forced out into wooded country. There is a good deal to be said for this kind of boundary to farms, and some farmers are already aware of the utility of the practice.

In planting a hedge round lands on a farm, a few deep furrows made by the use of the disc plough, and then harrowed, is all that is necessary for planting, and after the cultivator should be used occasionally to keep the soil open and the weeds down.

Garden hedges might be treated with more indulgence, and a good trench dug about two feet deep by two feet broad, and if the soil is not satisfactory, new soil, or at least manure or sand, whichever is required, added in the filling up of the trench.

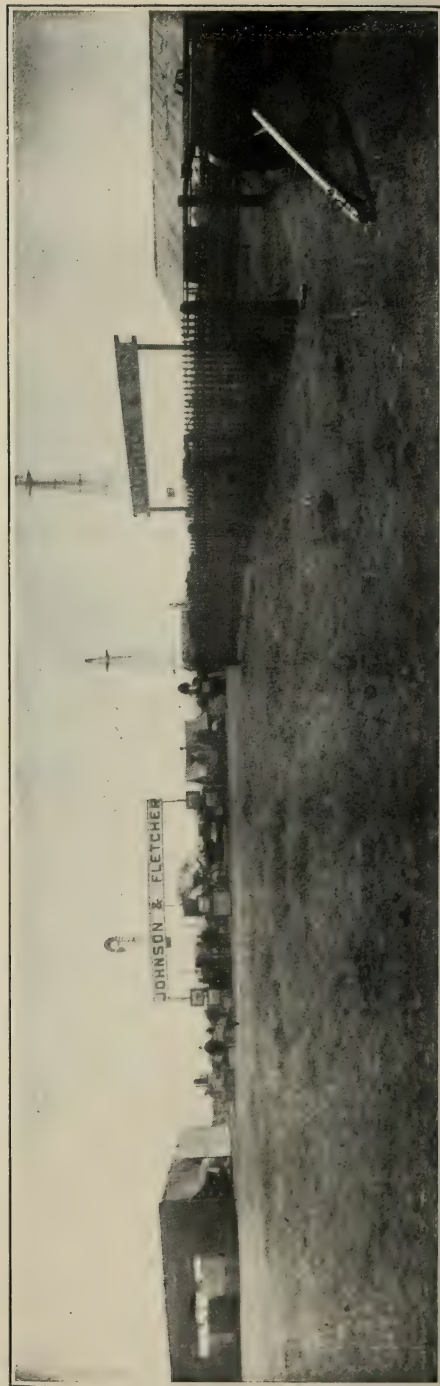
In all hedge growing the art of pruning has to be carefully studied in order to eventually produce the perfect hedge, the aim and object in view, to make a live wall, must be kept constantly in mind. Too vigorous shoots must be checked to obtain evenness and completeness. Wedge shaped trimming is preferable to the square topped hedge. In the case of any pest developing in the hedge, spraying with a paraffin emulsion should be repeated every other day until the plant is cleaned.

Hedges have a value in all countries, in the field and garden, and as the country develops, so they will be planted, until they will meet the eye when looking over some of the fertile valleys of Rhodesia, marking off one farm from the other, while to the suburban garden they will add the charm of privacy and quietness.

Views at the Bulawayo Show.



Judging in the Cattle Pens.



Photos by]

In the Implement Yard.

[J. S. Loosely.

The Shows.

By C. E. F. ALLEN, Agricultural Assistant.

The month of June was a busy one for those interested in the Annual Agricultural Shows.

THE UMTALI SHOW.—The first show held was at Umtali on the 11th of the month. The show was honoured by a visit from His Excellency the Commandant of Manica, Sehnor and Madame Perri de Lind and suite, and was well attended by the townspeople and farmers, who evinced great interest in the exhibits. The produce section was a prominent feature of the exhibition. Mealies and other cereals and beans were all of good quality, indeed their high merit all round was characteristic of the exhibits shown by Mr. A. N. Strickland, of Penhalonga, Mr. L. Cripps, and Mr. Waight, of the Premier Estates. The Old Umtali Mission gained the special prize given by His Honour the Administrator for the best mealies on the cob.

The exhibition of brooms made by the natives of the American Episcopal Methodist Mission from the broom corn grown on the Mission farm at Mutambarra, was one of the most interesting exhibits seen at the show; at the same time it was somewhat of a disappointment to find that the handles had been imported, when local bamboo or mulberry might serve the purpose. The Rev. Mr. Woodhouse, the Principal of the Mission, stated that he expected to be able to supply the market of Rhodesia with brooms in about two years at the same cost as that of the present imported article. Great credit is due to the Mission in having grown the broom corn, and after reaping it having brought it to its complete economic use in making these brooms, thus establishing what may become a very useful industry to the country. The beginning of another industry was indicated in the exhibition of Rhodesian spinning and weaving shown by Miss Guildson, of Melsetter.

Tobacco exhibits were not numerous, the tobacco that took the principal prizes came from Mr. Deall of the Experimental Farms. No cattle were shown at the show, but some good sheep, those of particular interest being the Persians from the Premier Estate, a Merino ram and ewes bred by Mr. Wienholt on the Rhodes Inyanga Estates.

These latter are a forerunner of what this country will produce when the veld becomes tame, and there are cattle on it to keep the herbage fed down. Some imported Shropshire ewes were shown by Mr. E. F. Sheppy. The enterprise of this gentleman was certainly largely instrumental in securing the successes at both the Salisbury and Umtali Shows. Some cross-bred Rhodesian ewes belonging to Mr. A. N. Strickland looked very promising for this class. There was no special prize list; however, the owner will probably reap his own reward in continuing his efforts in this direction. The gold medal for the champion ram for mutton was easily gained by Mr. Waight with a fine specimen of a Persian ram, and the Championship Gold Medal for a woolled ram was taken by Mr. Wienholt of the Rhodes' Farms. Mr. J. Meikle won the gold medal for the best Boer ram. Pigs were there in quality more than in quantity. Some large British blacks were especially admired. Berkshires shown by Mr. E. F. Sheppy were creditably represented. The poultry section was of considerable interest. Mr. W. C. Blands, Umtali, showed birds, being a valuable illustration of what can be done with poultry in this country, provided proper care is given to their wants. His Minorcas would be difficult to beat in any part of South Africa. Mr. E. F. Sheppy had a fine collection of birds on show, and won several prizes. The ladies of Umtali are to be congratulated on the very fine preserves, bottled fruits, and pickles which they can make. It is to be regretted that these are seldom seen at other times of the year than at shows, and have not yet found their way to the open market. A fine display of implements were shown on a plot some little way from the Drill Hall in which the produce was placed, an arrangement which strikes the visitor as leaving something to be desired in the arrangements of the ground. There was nothing noticeably new in this line, unless it was a very strong single horse cultivator which bore no name of maker on it. The exhibitors were Messrs. Meikle Bros. and the Salisbury branch of the Anglo-African Trading Association, both of whom deserve praise. The Companis de Mozambique showed particular interest in the show by an exhibition of a collection of minerals. Mr. A. Howat also had a fine exhibit in this section.

In conclusion, the impression taken away from Umtali after visiting the show was that the few farmers in that

part of the country, who do take the trouble to support the show, judging from the fruits of their labours, were progressive and quite up to date with those of any other district.

BULAWAYO SHOW.—This was the only complete show of the year, in that cattle were included as well as all the other customary sections, and was formally opened on the 11th June by His Honour the Acting Administrator.

The number of breeds of cattle, and the variety of crosses represented at the Bulawayo Show, indicates the readiness of farmers to experiment, and their anxiety to find an animal suited to their requirements. Laudible as such desires are, they do not tend to promote homogeneity of type or to facilitate further breeding on sound and reliable lines, but lead rather to the production ultimately of mongrel stock, a bovine hotch potch, without definite standard or pronounced utility for any particular purpose, be it meat, milk, or trek. The arrangements of the stalls was excellent, and the cattle could be well seen by visitors. Of the imported bulls, one Hereford belonging to Mr. Granger, and the two Shorthorns of Mr. E. A. Hull, deserve special mention. The larger of these two was awarded the championship, and all were in fine condition, and were good specimens of their types. A S.A. bred Friesland bull belonging to Mr. H. P. Fynn was much admired. Messrs. Beamish Bros. won the championship for the best S.A. bred bull with their Hereford. S.A. bred Herefords were much in evidence, while S.A. bred Shorthorns were also represented, and Messrs. Dechow and Tweedale took first prize with a fine beast.

For the championship for the best cow, Mr. Fleming's South Devon and Mr. Hull's Lincoln Red were close competitors, and the Lincoln Red won. Messrs. Curtis & Dennis took the premier prize for S.A. Friesland cows. Cross-bred cows were well represented. Friesland crosses were not on the show in the numbers that could be reasonably expected, considering the popularity of this breed. There were only two exhibits in S.A. Shorthorn heifers, the property of Mr. H. P. Fynn. In the Africander class the bulls shown were well made specimens, Mr. H. P. Fynn and Col. Napier taking first places. The classes showing first results from Rhodesian crosses were interesting and full of promise, and formed one of the most instructive items of the whole show. A native cow

with two calves sired by shorthorn bulls belonging to Mr. Hull, and a native cow with 9 months old calf sired by a Hereford bull of Messrs. Beamish Bros. were both good exhibits, and took prizes deservedly. Mr. Gwynn's cross-bred Devon heifers, and Mr. A. E. Hill's cross-bred Friesland heifers are all worthy of mention. The Rhodesian breeders prize for cross-bred Friesland heifers went to Messrs. Fletcher and Espin. Among unclassified cattle, Messrs. Beamish Bros. were to the fore with a cross-bred Hereford bull, while two fine North Devon heifers were exhibited by Mr. Gwynn. Two spans of trek oxen, and some magnificent slaughter oxen were exhibited.

Generally, the cattle section was a success, and the great interest displayed by the visitors in the various breeds and their offsprings, was a good omen for the future of Matabeleland as a stock country.

The magnificent exhibition of produce of all sorts was very impressive. There was a fine display of tobacco, though not as large as it would have been had there been a more settled feeling among the growers as to markets. Turkish leaf was much in evidence. It is perhaps desirable to give more inducement to growers to exhibit commercial bales in place of encouraging the fancy methods of showing tobacco, which is no indication of the quality of the crop. Beginners in the industry might learn much from displays of bales done up in this way than from mere decoration displays. A good show of Rhodesian tobacco in every form of cigarettes, roll, cavendish, flake, plug and boer cut was shown by various manufacturers.

The maize exhibits were fairly numerous, and some good samples of Boone County, Hickory King and Yellow Mealies were shown. The cob exhibits were not up to the usual standard owing perhaps to the season. Heavy rainy seasons very often do not produce such good cobs as an average season. There were some very large cobs of Boone County shown, one cob counting over 1,300 grains. Bread mealies shown by the Empandeni Mission were much admired; these are, however, not a commercial variety owing to their light yield, and because as yet few people in Rhodesia have learnt the uses of mealies for human food, including bread and cakes. Wheat and oats shown were not very remarkable. Bean exhibits were numerous and of very good quality. These crops deserve more attention, beans being much in request for native

Views at the Bulawayo Show.



In the Implement Yard.



Photos by]

The Edmonds Tank erected by Messrs. Felgate & Co.,

[J. S. Loosely.

Produce at the Bulawayo Show. The best assortment of Winter Foods for Cattle, exhibited by Messrs. Curtis & Dennis, Belle Vue.



C.—Collection Rhodesian Produce. 1st Prize.



D.—Assortment of Winter Food for Cattle. 1st Prize and Special.

rations on the mines, while export trade to the Southern Colonies might readily be established. Their value as a fertilising crop has also to be remembered.

Stock foods were well shown. Hay, forage, and roots were exhibited in great variety. Messrs. Curtis & Dennis deserve special mention for their stand of Rhodesian produce, in which many excellent forms of stock foods were seen, such as cowpea meal, corn and cob meal, sunflower meal and velvet bean meal, lucerne hay, millet hay, velvet bean hay, cowpea hay, veld hay, ensilage, and also some very well grown mangold wurzels, and green barley, chicory, and paspalum as green feeds. On the whole the produce exhibits showed very careful selection, and a great variety of what are at present minor crops, which may in the future be of great service to the farmer in providing a fertilising or catch crop.

In the implement section there was the usual display of up to date machinery of all the popular makes, a large number of exhibits of wind motors for pumping purposes, grinding meal, etc.

The Edmonds' Dipping Tank attracted much attention among stock owners, and is referred to elsewhere in this issue.

SALISBURY SHOW.—The Salisbury Show was opened by His Honour the Acting-Administrator on the 25th of June. In his opening speech, Mr. Newton regretted the absence of the cattle section, which had deprived the visitors of the opportunity of inspecting the fine lot of cattle they knew were in the country.

Sheep and goat exhibits were moderately good, there being a lack of competition and in number of exhibits. Mr. Morris's pen of cross-bred ewes, Rhodesian bred, deserve special mention.

The pigs were few, but had several good exhibits among them. The special cup in this section was secured by Messrs. MacLaurin Bros.

Tobacco was said to be inferior as compared with previous years. There were, however, some very nice looking samples on the tables. The B.S.A. Tobacco Plantation Co. merit special mention for their exhibit as growers and manufacturers, showing tobacco in infinite variety, from the leaf to the many grades of manufactured goods. There were also exhibits of pipe leaf, dark and light cigar fillers, and Turkish leaf. An interesting display of home

industries and works of utility and art, the performances of Rhodesian ladies, was exhibited under the auspices of the Loyal Women's Guild, and attracted much attention. It is hoped that such exhibits will become a permanent feature of our agricultural shows.

The exhibits of produce were numerous, and of the same good quality that had been characteristic at the Bulawayo and Umtali Shows. Mealies included Hickory King, Boone County, Horsetooth, Salisbury White, Golden Eagle and other Yellow Mealies. In the cob exhibits all these varieties also figured, and some very fine specimens were to be seen. Hickory King appears to be the favourite mealie for the light soils in the country, though Boone County has been grown on an increasing number of farms. Beans were shown in good quantity, also Buckwheat of excellent quality. Two exhibits of linseed grown by Messrs. Maclaurin Bros., and also one by Mr. C. F. Browning, were of fine quality. This most useful crop evidently grows well here, and it is probable that more will be grown next year, as it is only required to be known to be appreciated. Sunflower seed and monkey nuts were well shown. Potatoes were very good. A bag of "Up To Date," exhibited by Mr. Yeoman, merits a special mention. Amongst the varieties shown were Early Rose, Magnum Bonum, Flour Ball, British Queen, White Elephant, and Factors. There were good exhibits of all these, proving what the country can produce in this direction, for which such a ready market exists. When the number of farmers within easy reach of Salisbury is remembered, the display of outstanding merit was comparatively small. Many farmers would have exhibited, but lost interest, and did not show their produce as they could not exhibit their stock, and although this can be readily comprehended, it is none the less to be regretted.

Honey in the comb and in the bottle was exhibited with all kinds of bee appliances and bees by Mr. H. Brown and Mr. E. F. Sheppy.

The Methodist Episcopalian Mission from Mutambarra again showed their native broom ware that had attracted much attention at the Umtali Show. Farm seeds were shown by Messrs. G. H. Williams & Co. and the Anglo-African Trading Co., and a striking display of garden plants were staged by Mr. F. Hubbard, of Ardbennie, at the entrance of the Produce Hall.

In the implement exhibits, which were very large, there was nothing new ; the implements were of the best makes, and thoroughly up to date. The section was visited by many farmers to discuss the relative merits of the rival makers with their respective supporters, always an instructive feature of an agricultural show. Forage of all kinds was good. Veld hay, cultivated grass hay, manna hay, oat hay were amongst the exhibits. The show was strong in the variety of produce, and in comparing the exhibits here with the collection made by the Department of the exhibits at Bulawayo and Umtali shows, the quality was maintained in each of these widely separated centres of Rhodesia, and it is difficult to say which was better than the other.

Poultry.

(Continued.)

By PHILIP N. HALL, Lenham Farm, Syringa.

First it is advisable to examine the outside of the specimen for wounds, bruises, skin diseases or broken limbs. The appearance of the comb, face and plumage should be noted. The mouth and throat must be examined, and any abnormal conditions, such as a purplish colour, growths of a cheesy nature or accumulations of saliva be observed. The fowl may then be laid on its back upon a table, its feet towards the operator, and the wings held down on either side, well spread away from the body. Pluck a few of the feathers from each side of the breast and abdomen, and while this is being done, note the appearance of the skin, or whether the fowl is thin or fat, or in an apparently healthy condition. If there is scarcely any flesh upon the keel bone, liver disease may be suspected, and the feathers being matted and dirty about the vent, often indicates enteritis or inflammation of the bowels, particularly if the excrement is of a white or yellowish green colour. Now make a cross cut in the skin of the abdomen immediately behind the breast bone, taking care not to touch the bowels. Run the scissors down

each side to the back, and then make a lateral cut through the ribs on both sides. The whole of the breast may then be lifted up and forced back towards the bird's head, exposing the gizzard, liver and heart. The remaining skin on the abdomen may be cut on either side and drawn away towards the stern, showing the entrails, and, if the bird is a female, the egg organs between them and the back. The liver may be examined first, as it will be the first organ to strike the eye. It should be firm, not unnaturally large, and of a healthy chocolate red colour. It should not be a yellow brown tint, nor should it show specks of any kind. If an incision is made through the thin diaphragmatic membrane between the liver and the walls of the chest, the lungs will be seen on either side at the back of the heart. These organs, if healthy, should be of a bright salmon pink colour, and a piece of one put in water should float. They are frequently affected by Tuberculosis, which shows itself in little yellowish growths or nodules, which also not infrequently spread and attack the heart. The latter organ should be of a deep red colour, and although it may have a marbling of fat round its base, this should not be excessive, and any specks of fat that may appear should not be mistaken for the tuberculosis nodules already mentioned. The heart should be evenly shaped and not distended with blood on the one side, and shrunken and empty on the other. If it is so, and it is known that the fowl dropped down dead suddenly, the cause of death may without hesitation be put down to syncope or heart failure. The throat, crop and gizzard may next be looked at, the "canal" being laid open right along for any obstruction that may have taken place, an accident that would be more likely to occur between the crop and the proventical than anywhere else. In the case of a hen, the cause of death may often be found in the egg organs. There may be some contents of a broken egg in the oviduct, or there may have been an escape of some of those contents into the abdominal cavity where acute inflammation would immediately be set up, peritonitis bringing about speedy death. The gizzard may be cut open and the contents examined. The intestines should be of a greyish white colour, and the kidneys, which are fixed to the spine, a reddish brown. If the symptoms before death are observed, it will seldom be necessary to go through all the various organs of the body in search

of the affected parts. For instance, a dejected look, a yellow hue of face and comb, variable appetite and loss of flesh will denote tuberculosis or some liver affection. Diarrhœa will usually indicate some intestinal irritation. An apoplectic seizure and delirium will point to an effusion of blood upon the brain, and, as already pointed out, a fainting fit, followed by death, directs one to look at the heart for confirmation.

I think that the foregoing information on the post-mortem examination of a fowl may be not only of use to the amateur, but may induce others who have never troubled to ascertain the cause of death among their birds to do so. There is little room for doubt that the wholesale deaths among many of the large flocks of farmyard fowls may be traced to the utter lack of attention even to the most elementary rules as applied to poultry rearing under all circumstances. The indiscriminate mating, usually resulting in a vast amount of inbreeding, is sure to result in weak constitutioned birds, with the inevitable result that any dormant disease in the parent stock will be reproduced in a greatly exaggerated form in the progeny, and the weak constitution will render them far more liable to become diseased through a variety of causes that would probably not affect well-bred birds. The running of mixed flocks of native fowls with well-bred stock is a mistake, and the farmer would find infinitely more satisfaction in keeping a smaller number of well-bred fowls, which, while costing no more for their keep, will supply the breakfast egg with far greater regularity.

The Treatment of Redwater.

By C. R. EDMONDS, G.V.S.

Referring to some notes of mine that were published in the Journal of April, 1909, as to treatment of these diseases, I think that in view of the havoc this disease has played in the past with susceptible cattle, and the probable introduction during the coming season of numbers of such cattle into Rhodesia, some results of the treatment by Methyl Arsenate of Soda that have been obtained in this district will be of interest. I only quote cases that have occurred in herds containing a fair number of animals, the odd beasts that have been treated I do not mention.

1st Lot.—Herd of 50 imported heifers, two dead before treatment was commenced, about 20 showed visible symptoms of the disease, 12 in a severe form discharging claret coloured urine. No further deaths occurred.

2nd Lot.—Herd of 58 imported heifers, six dead and several others sick, blood of which under microscopical examination revealed typical Redwater. After treatment was commenced, no further deaths occurred.

3rd Lot.—Herd of 39 imported heifers, two dead; treatment commenced Friday afternoon. Two more dead the following day. Every beast in the herd showed visible symptoms of the disease, but no further deaths occurred.

4th Lot.—Herd of 70 imported heifers. The owner, Mr. St. Chas. B. Gwynn, has kindly forwarded the temperature charts of all the heifers, which show in every case a distinct febrile reaction, in some cases as high as 108° F.

The following extracts are taken from Mr. Gwynn's report:—

“By means of this treatment I have not lost one of the 70 odd I got up from the Colony this season from Gall-sickness or Redwater. I except of course Nos. 1 and 4. No. 1 had been in Bulawayo some time, and was practically dead on arrival, and so weak that I did not give her the arsenite. No. 4 ran away at the beginning of her treatment, and was found and brought home on a sledge to die.

“Doses of Methyl Arsenate: Under 15 months gave 3 daily doses of 1-10th oz. Over 20 months I gave one drachm daily. There was much loss of condition and

a quicker recovery in cases from 23 months onward, by giving a full drachm a day, each drachm divided into three parts and given in the early morning, at midday and sundown. There were no symptoms observed in these cases of arsenic poisoning, nor were the kidneys noticeably affected.

"As soon as cattle were seen lying apart and seeming distressed, they were caught and the temperature taken, examined for ticks, and if a number of the small ticks in the second stage of moult were found on the thighs or escutcheon, a full dose of Glauber salts was given, and Methyl Arsenate the following three days. When the fever had run its course, a tonic was given with their food twice a day (valuable animals got it three times a day). Barring the three heifers not treated, Nos. 47, 48, and 49, there was little loss of condition. It is an iron tonic, and not out of the ordinary, but as it seems to aid the convalescence greatly, I give it below.

"Reduced iron, 2 oz.; powdered gentian, 4 oz.; powdered vomied, 2 oz.; powdered rhubarb, 2 oz.; potass nitrate, 6 oz. Thoroughly mixed and given in heaped tablespoon doses two or three times a day in food (crushed mealies or bran) a little sprinkled on food for a day or two, until they acquire a taste for it.

"You will probably have your own iron tonic. During the course of the fever, 2 oz. of Glauber salts was given every morning.

"The disease, as shown in above cases is, I think, the mild autumn type of the fever, what we call acclimatising, and I think a fair percentage would recover. I want to try it on cattle of the same age in January, February and March, when ticks are most virulent. Di Methyl Arsenate is, I believe, a cure, provided the animal is helped with a nutritious laxative diet and assisted through the convalescence. A good iron tonic is required to build up the blood once the fever abates, and should contain a mild liver and kidney stimulant."

Termites.

An interesting and instructive article appears in the "Agricultural Journal of British East Africa" for January, 1909, on the "White Ant," by Mr. T. J. Anderson (Entomologist).

We learn that a queen ant or Termite lays from 20,000 to 80,000 eggs per day. Such community of termites consists of (1) soldiers; (2) workers; (3) winged males and females. The third kind stay in the nest only for a brief space. They then fly a short time, settle on the ground, and cast their wings. Pairing takes place, and each pair are capable of forming a new colony. Considering the enormous numbers which swarm from mounds to holes in the ground, only a very small proportion can ever live to accomplish this.

The treatment recommended in destroying mounds is sulphur and arsenic fumigation with a machine called the "Universal Ant Exterminator," and by the description given of this machine, it appears to be a practical and well planned weapon of destruction. They cost £4, and are obtainable in Pretoria.

In erecting wattle and daub huts, on farm buildings, it is recommended to treat the mud used with a weak solution of copper sulphate, to keep the ants out of the building. Croton oil is also recommended for this purpose.

Agricultural Reports.

MARCH, APRIL, AND MAY, 1909

MATABELELAND.—Cattle Removal Regulations have been strictly enforced by the Native Commissioners of the various districts. Natives are reported as becoming more eager to register their brands, and quite a number are now doing so, though most still prefer the old custom of ear-marking.

Very satisfactory reports in respect of the harvest have been received. In Belingwe a fair average crop of grain is assured, and in the Bubi district they are excellent, heavier than for many years past. Gwanda also reports good crops. Inyouti and Kafir corn are extremely good at Insiza, but mealies are a comparative failure. There is an appreciable increase in the crops of monkey nuts and beans. Baboons continue to be troublesome to agriculture in the Matopos; they are said to be so numerous and destructive to crops as to make some parts untenable. Another pest which is reported to be fairly universal is the small bird. They are giving great trouble to the native people in the Mzingwani district—the kraals are deserted all day, the inhabitants being in the fields keeping the birds off the small grains. This “bird pest” will become more apparent when more small grains are grown by Europeans, and eventually systematic poisoning will have to be resorted to.

Three natives in the Selukwe district have stated their intention of purchasing ploughs for the next rainy season; the crops in this district are good.

The local labour supply in Matabeleland has shown signs of distinct improvement. Till lately there existed a shortage in several districts, but latterly, for other than mining purposes, the supply has been equal to the demand.

As winter approaches, scab amongst native sheep and goats has begun to manifest itself in several districts, and flocks of native stock are being affected. Preventative measures are being undertaken by dipping, and the scab regulations are being applied in a tentative manner in the Mzingwani area.

In Belingwe district, near Sizuku's Kraal, twelve swarms of young locusts have been destroyed by the police. Native crops are favourably reported on in all parts of the district, but mealies and European crops are disappointing.

Native stock in the Matobo district is flourishing. All stock is said to be doing well, except that there is considerable mortality among European bred calves from liver trouble.

May: Steps for the preservation of pasture by burning fire-guards have been undertaken in some districts.

MASHONALAND.—In general the mealie crops, rapoko, and white millet are far above the average, and everywhere natives are expected to have grain for their own requirements, and in some instances large quantities to dispose of. In Mtoko, however, crops suffered from lack of late rains, and are not so good as anticipated. Crops are expected to be very good in Victoria, with the exception of mealies, which will be a light yield owing to having been stunted by the drought experienced in this district in December. Native ground nuts and beans are plentiful. In the sandy districts there are heavy yields of ground nuts, sweet potatoes, etc. Rice has been grown to a greater extent this year than has been the case for three or four years.

Mealies are being cultivated to a larger extent than hitherto by the natives round Inyanga, where the presence of traders has affected the growing of crops in this district. Many grow beans, peas, mealies, etc., for the purpose of selling.

“Munga” is said to have failed in the Chiduku Reserve, perhaps through too early planting. Fair returns from the mealie crops in the high veld have been received. Native crops in the Sabi Valley and the warmer parts of S. Melsetter are good. Native cattle are in good health and fat.

Hartley has been much handicapped by the appearance of the “Tsetse-fly,” and stock farmers have been much disconcerted here, and Marandellas is still under surveillance. Imported stock has suffered through red-water and acclimatisation ills, but other cattle are doing extremely well. Several cattle owners round Enkeldoorn are getting up Hereford bulls, but round Salisbury the Friesland breed is the present favourite.

Three rhinoceros were reported as doing considerable damage to the native crops in North Mazoe, one of which was shot by the Acting Native Commissioner.

Epitome of Cattle Inspectors' Returns.

APRIL, 1909.

SALISBURY (MARONDELLA).

African Coast Fever.—The mortality to the end of the month was 88. The source of infection has not been traced. The only infected areas in the whole territory are those in the Umtali district; no susceptible cattle have been on these for some months now, and the whole is well guarded. The possibility of a beast contracting the disease on any of these areas, getting through the police cordon and Springvale Farm—which is at least 85 miles from the nearest point of the infected veld—without discovery, is remote, and if any such thing did occur, other outbreaks would have occurred in the district, and in the intervening district of Makoni. The history of the cattle on Springvale, and the movements of cattle to and from it afford no clue as to the source of infection.

MEASURES TAKEN FOR THE PREVENTION OF THE SPREAD OF THE DISEASE.

All movements were stopped in Marondella and parts of the adjoining district, and all cattle which had left Marondella district after the 1st March were placed in quarantine, but happily none of these manifested signs of the disease. A Government Veterinary Surgeon was placed in charge of the Springvale cattle, and police patrols were despatched in every direction to ensure that no cattle were being moved, and to enquire from farmers and others as to any cases of sickness. A cordon of European and Native police has been placed around the infected area. All cattle on the adjoining farms were kept under constant observation.

Information was received that cattle were sick on the farm Lillyfontein, on the border of the Charter district. A force of B.S.A. Police and R.N. Police was at once despatched there. A Government veterinary surgeon has been in constant attendance, but so far nothing has been discovered except Trypanosomiasis.

On the farm "Gatzi," about four miles from Springvale, suspicious cases occurred amongst a small lot of Friesland heifers imported some months ago from the Cape Colony.

On the farm Highlands, Mr. Stirling, G.V.S., found two calves on the 22nd April with high temperatures. Owing to the proximity of the disease at Springvale, this was regarded with suspicion, and a temperature camp was at once started; within ten days 28 animals—mostly calves—showed high temperatures, and were removed from the main herd. On the fourth day at mid-day all showed normal temperatures except two. Only one death has occurred, and the cause was attributed to valvular heart disease. At two other temperature camps a similar course of fever has been observed in calves; so far microscopical examination of blood smears has failed to demonstrate *piroplasma parva*. I am of opinion that these reactions are either Redwater, or the disease caused by *Piroplasma mutans*. I may remark here that ticks have been more prevalent in this district during the past season than for many years past.

BULAWAYO.

African Coast Fever.—Test cattle were placed in the old infected enclosure, and up to the end of the month no sickness was reported.

Scab.—One consignment of imported sheep arrived infected.

Glanders.—The following animals were tested upon entry:—Horses, 45; mules, 176; donkeys, 150. One mule reacted and was destroyed.

UMTALI.

African Coast Fever.—Some cattle running on Plot No. 5, Inbeza Valley, were very close to the old infected area, and the owner was given facilities to remove the stock, provided they were kept under veterinary supervision in a properly fenced enclosure. Temperature taking was carried out daily, and in eight days high temperatures were revealed. The owner, upon this, voluntarily agreed to slaughter off the animals. Four separate examinations of blood taken from the febrile cases were made, but it was only on the last and fourth examination that definite results were obtained, and the *Piroplasma parva* detected in small numbers.

Biliary Fever.—One mare recovered.

Horse Sickness.—One inoculated mule died.

Scab.—One outbreak on the Commonage.

VICTORIA.

Rabies.—This disease appeared amongst some of the coach mules on the Victoria-Selukwe road.

Horse Sickness.—One horse and a mule died.

GWANDA.

Scab.—One outbreak.

OTHER DISTRICTS.

No disease reported.

MAY AND JUNE, 1909.

SALISBURY.

Scab.—One outbreak of scab on Commonage.

MARONDELLA.

African Coast Fever.—Springvale: Total number of deaths to end of June, 134.

Rusawi Outspan: A fresh outbreak occurred amongst Mr. Finch's cattle running on Rusawi Outspan, about three miles from Marondella Station. One beast died, and the remainder were removed to clean veld. Several animals showing high temperatures were returned to the homestead at various dates, but so far no other case of Coast Fever has occurred. One ox was destroyed as suspicious, but no trace of Coast Fever lesions could be found on post-mortem, and microscopic examination of blood smears proved negative. Six animals died from other causes, chiefly arsenical poisoning, the result of spraying.

MARONDELLA STATION.

Two animals died at the Native Commissioner's Camp and two at No. 1 Temperature Camp amongst Messrs. Day & Bradshaw's cattle removed from Marondella Station.

GATZI AND HIGHLANDS.

It has been definitely ascertained that African Coast Fever does not exist on either of these farms, and that the temperature reactions were due to Redwater.

LILLIEFONTEIN.

No trace of Coast Fever infection was discovered on this or any of the adjoining farms, and all the European and Native Police posts except one were withdrawn.

Three animals died from Trypanosomiasis, identified by Dr. Theiler as Tryp. Dimorphon. The infection was contracted in the Hartley district, and also according to the owner's statement in a fly belt near the junction of the Sabi and Macheke Rivers. No cases have occurred in any of the farm stock.

BULAWAYO.

African Coast Fever.—One of the test cattle placed on the Msingwani infected area on 12th April showed a rise of temperature on 1st May, and died subsequently from Coast Fever. The remainder of the cattle were removed to another part of the enclosure, and are still healthy. The area on which this animal contracted the disease is the camp on which all the sick cattle were concentrated on removal from the temperature camp during 1907, and the last death occurred about the middle of January, 1908.

Glanders.—The following animals were tested upon arrival for Glanders. One animal re-acting was destroyed. May: Horses, 275; mules, 410; donkeys, 504. Total, 1,189. June, Horses, 171; mules, 115; donkeys, 35. Total, 321.

UMTALI.

African Coast Fever.—Nothing to report.

Horse Sickness.—Ten horses and four inoculated mules died.

MELSETTER.

Scab.—Two outbreaks occurred.

ALL OTHER DISTRICTS.

No contagious disease.

J. M. SINCLAIR,

Chief Veterinary Surgeon.

Weather Bureau.

MAY.—Temperatures recorded at various stations in Southern Rhodesia during May were generally about the average for this month. Towards the latter part of the month the nights were very cold, and frost was general in the lower lying parts of the country. The rainfall recorded shows a fall above the average for the month in Mashonaland. At Mount Darwin nearly two inches is recorded, which is a record for that station in this month since its establishment in September, 1901. In the seven years this station has recorded nothing higher than 0.26 in 1905.

In Matabeleland the rainfall recorded is about the average for the month.

JUNE.—Temperature records have only reached us in a small number at time of writing; these indicate very cold nights, and rather more nights on which frost occurred than usual. The month was a windy one, the prevailing winds as usual being South-East.

Very little rain is recorded, the weather being generally over all the country the usual bright and cold healthy weather expected during June.

(Signed) C. E. F. ALLEN,

Officer in Charge, Weather Bureau.

TEMPERATURES RECORDED IN MAY.

Station.	Mean Temp.	Maximum.	Minimum
Umtali	55.9	77.9	33.0
Gwelo	59.0	74.0	44.0
Hope Fountain	59.6	72.1	47.1
Melsetter	—	73.8	—
Belingwe (27 days) ..	—	75.8	46.2
Gwanda.. .. .	61.9	76.9	46.8
Rhodes Matopos Park ..	59.5	73.1	45.8
Karyangew, Sebungwe ..	68.2	77.7	58.6
Salisbury	60.3	73.6	47.0
Victoria	60.6	75.8	45.4
Inyanga	55.5	67.8	43.2
Empandeni	65.5	76.9	44.1

RECORDS RECEIVED OF RAINFALL AT STATIONS IN SOUTHERN
RHODESIA DURING MAY AND JUNE.

District.	May.	June.
<i>Mashonaland.</i>	Inches.	Inches.
Charter	.19	.10
Chilimanzi	Nil	*
Chishawasha	.30	*
Driefontein	.56	Nil
Enkeldoorn	.22	*
Gatooma	.46	Nil
Gutu	.10	*
Inyanga	.74	*
Macheke	Nil	Nil
Makoni	.50	Nil
South Mazoe	.13	Nil
Melsetter	.45	*
Mount Darwin	1.90	.01
Marandellas, Progress Farm	.45	*
Salisbury	.03	.04
Sinoia	.04	Nil
Sipolilos	.54	Nil
Umtali	.53	.27
Umtali, Honde Heights	1.17	.78
Umtali, Utopia	.13	.58
Victoria	.12	*
York Farm, Inyanga	.65	.64
<i>Matabeleland.</i>		
Bulawayo		
Belingwe	Nil	.12
Essexvale	.02	*
Empandeni	Nil	Nil
Fort Rixon	.15	*
Gwanda	.23	*
Gwelo	.19	.02
Hope Fountain	.18	.01
Inyati	Nil	*
Matopo Mission	.06	Nil
Rhodes Matopo Park	.04	*
Sebungwe	Nil	*
Tuli	Nil	Nil
Victoria Falls	Nil	Nil

* denotes no record received at date of compilation.

Correspondence.

BREAD MAKING.

By S. T. JORDAN, Rose Farm, Gwelo.

Bread wanted in a hurry.—Have first of all your oven ready for baking, or if a bake pot is used, plenty of hot coals ready. To every quart of flour take two full tea-spoons of baking powder, add salt to taste, and mix all well together in a dry state, then take water or milk sufficient to make the flour up into a fairly stiff dough; make the bread as quickly as you can, dust your pot or pan with flour or slightly grease with fat to prevent the loaf from sticking to the sides, put the dough in the pot and bake at once. To test if baked sufficient, take a clean knife and plunge into the loaf for a second: if it comes out clean the bread is baked enough.

Bread made with patent yeast cakes, obtainable at stores at 9d. per tin.—Take one cake and dissolve in lukewarm water, say a small cup full, take four cups of lukewarm water, and put in a dish, add flour to make a fairly thick sponge, then add the above dissolved cake, and mix well, cover, and set over-night in a warm place to rise. In the morning add flour and make dough, working it well together till the dough comes clean away from the sides of the pan, shape into loaves, and put into greased pans or bake pots, filling them a little more than half full, set to raise, and then bake. One cake is sufficient to make 12 lbs. of bread.

To $3\frac{1}{2}$ lbs. of flour add a dessert spoonful of salt and mix well. Mix two tablespoonfuls of fresh yeast with half a pint of warm water, make a hole in the middle of the flour, pour the yeast into this hole, and stir with a spoon until you have made a thin batter, sprinkle this over with flour and cover the pan with a cloth, and let it stand in a warm place for one hour, then add a pint of warm water and knead the whole well together, make it into loaves, and then let it stand to rise, and then bake.

Another way to make bread is to take Kafir beer instead of water to mix the flour with, set in the sun to rise, and then bake. With fresh beer, bread will rise in half an hour.

Sour dough bread.—Take dough from mixing a lump about the size of your fist (clenched), put it into a 1 lb. oblong tea-tin, and keep the lid closed until wanted. To use, add warm water to the dough in tin, and stir till a thin batter is made, and the tin is about two-thirds full, set the tin near the fire (not too close) or in the hot sun till the batter works and fills the tin to the brim, put the flour in a pan, and add the batter and mix well to a stiff dough. Take dough for next baking as above, and put in a tin, put in tins or bake pots, then place it in the hot sun; it should rise in half an hour, then bake.

Bread sounds hollow when properly baked.

Cheap and nutritious bread.—Take from a $\frac{1}{4}$ to $\frac{1}{2}$ a lb. of mealie meal to 1 lb. flour. To make, take boiling water, and pour over the mealie meal, and mix till a thick porridge is made, let it cool down and add to flour, mixing well, add yeast and proceed as above.

To make yeast.—Boil, say on Monday morning, two ounces of best hops in four quarts of water for half an hour, strain and let it cool to luke warm, take a small handful of salt, and mix also $\frac{1}{2}$ lb. of sugar, take 1 lb. of flour, and mix all well together in a bowl. On Wednesday add 3 lbs. of potatoes, boiled and then mashed, let stand until Thursday, then strain and put into bottles, and it is ready for use. It must be stirred frequently when making and kept near the fire. Before using, shake the bottle well. This will keep for two months if kept in a cool place.

[This correspondence may now cease, and the correspondents are thanked for their kind contributions.—EDITOR.]

AGRICULTURAL EDUCATION.

TO THE EDITOR, "AGRICULTURAL JOURNAL."

Sir,—I notice that at the recent meeting of the Agricultural Union, much time was devoted to an interesting discussion on the need of greater facilities for general education for farmers' children. While in no way desiring to discourage such a laudable object, may I, through

the Journal, call the attention to the need also for education of those who have left school, young men and girls, and for the matter of that old farmers too in matters appertaining to agriculture. Nothing strikes me more than to observe how little our farmers know either of the practice or the science of their calling. We must sadly admit that we are for the most part very amateurish and very ignorant of many things which might materially assist us in our endeavours to make a living on the land.

What we need is instruction on such matters as the care of livestock, well or ill, dairying, the cultivation of crops, and some idea of the right soil for each, its uses, seasons, and value when sold, the pests of crops and fruit trees, pruning, grafting, measuring up land; these and much else of the same sort. Odd lectures and the Journal no doubt do good, but the time is approaching when more systematic courses of instruction are wanted, open both to our own rising generation and youths from overseas. Hoping this matter may be ventilated in your pages,—I am, etc.,

AGRICOLA.

[Correspondence on this highly important topic is cordially invited.—EDITOR, *R.A.J.*]

Garden Calendar.

THE FLOWER GARDEN.

By N. L. KAYE-EDDIE.

September.—Although our spring advances with this month, rains are very uncertain and sometimes scarce, but in spite of circumstances plants now grow with very little encouragement. Perennials and shrubs should be well attended to, especially those which flower early, the soil should be kept well stirred around the stems, and they should be watered if necessary.

Practically all flower seeds may now be sown in boxes, nursery beds, or in the open ground where they are to be

grown. Nursery beds are perhaps preferable, as a great deal of watering may have to be resorted to on account of late rains. All annuals sown in July should now be ready for transplanting; should these be few, and a larger show of flowers desired, the heads may be pinched out after planting, which makes the plant spread out more and become bushy. Shrub and ornamental tree seeds should be sown now if desired for planting out during the rainy season, and may be sown in the open; if it is desired to hasten them they should be planted in boxes and covered with glass and placed in a sunny position sheltered from the winds. If summer bulbs have not already been replanted, this should be done at once; they sprout as the weather becomes warmer, and, if allowed to do this before planting, the bulb loses much of its vigour. It must be borne in mind that all bulbs that cluster, if divided, produce better blooms, and the plants have a better appearance than the old cluster, which has a lot of decayed matter and generally a ragged appearance; this also applies to those perennials which may be increased by division of roots.

October.—All flower seeds, annual and perennial, may be sown as in September; a word or two on open seed beds may not be out of place here. These beds should be prepared in a sheltered position, the soil should be well and deeply dug,—this is more essential than at first thought, as in this state the soil when once watered is more easily kept moist, and is not so liable to cake; the top dressing should be free from all undecayed vegetable matter and, when sown, the seeds should be covered with a thin dressing of fine light soil, over which a thin covering of grass may be placed to keep off evaporation.

Transplanting from boxes or beds should be done on a dull day or towards evening; the plants should be well watered before being removed, and the roots disturbed as little as possible, care being taken that the latter have their full depth and spread when planting.

KITCHEN GARDEN.

September.—Most seeds may now be sown, though there is risk of losses from want of rain. Watering of course can be resorted to. Marrows, pumpkin, melon,

cucumber, and peas may be planted in the field after the first rains. Tomatoes that have been sown earlier should be planted out, and these as they come on should be staked.

October.—As in September, nearly all vegetable seeds may be sown. Early potatoes should be earthed up when reaching the height of about eight inches. In planting a small amount of marrow, melon, cucumber, and pumpkin the writer has found it economical to sow the seed one in a tin and transplant when about four inches high in hills. A few cucumbers planted in this manner yielded nearly 400 a week for about two months. Sweet corn and mealies may also be sown this month.

Market Reports.

London market reports show that large shipments of maize continue to be received from the Plate River, America, and prices have undergone very little change.

South African maize has been sold in small quantities, principally for the Continent, at prices from 26s. 9d. to 28s. 1d. per 480 lbs., C.I.F.

Owing to the small shipments, oats have been in good demand, and the prices become firmer. South African oats have been sold at 18s. 6d. per 304 lbs., C.I.F.

Market quotations supplied by:—

1. Messrs. Jas. Lawrence & Co., Ltd., Johannesburg.
2. Messrs. Jas. Lawrence & Co., Ltd., Kimberley.
3. Messrs. Wightman & Co., Ltd., Salisbury.
4. Messrs. Whitfield & Co., Salisbury.
5. Messrs. Hubert Morisse & Co., Johannesburg.
6. Johannesburg Produce Commission Agency.

(1) Jas. Lawrence & Co. (Transvaal), Ltd., Johannesburg:—

Barley, per 150 lbs. . . .	11/6 to 13/6
Boer Meal (unsifted), per 200 lbs. . . .	23/6 „ 26/-
Boer Meal (sifted), per 200 lbs. . . .	27/6 „ 30/6
Bran, per 100 lbs. . . .	8/- „ 8/3
Beans, per 200 lbs. . . .	13/6 „ 45/-
Chaff, per 100 lbs. . . .	3/- „ 4/6
Eggs, per dozen	1/2 „ 1/4½
Salt, per 200 lbs. . . .	5/- „ 5/6
Forage, per 100 lbs. . . .	3/3 „ 7/-
Wheat, good, per 200 lbs. . . .	19/6 „ 22/6
Rye, per 200 lbs. . . .	14/6 „ 16/6
Manna Hay	3/- „ 4/6
Kaffir Corn, White, per 200 lbs. . . .	7/9 „ 8/6
Kaffir Corn, Red, per 200 lbs. . . .	8/6 „ 9/3
Butter, per lb. . . .	10d. „ 1/4
Hay, per bale	5d. „ 1/1

Mealies (S.A.), White, per 200 lbs. . . .	9/- to 9/6
Mealies (S.A.), Yellow, per 200 lbs. . . .	9/6 „ 10/-
Oats, Inferior, per 150 lbs. . . .	7/- „ 7/9
Oats, Good, per 150 lbs. . . .	8/6 „ 10/6
Potatoes, per 150 lbs. . . .	14/- „ 21/6
Onions, per 120 lbs. . . .	8/- „ 9/6
Lucerne, per 100 lbs. . . .	5/- „ 6/6
Slaughter Oxen, dressed, prime, per 100 lbs. . . .	25/- „ 31/6
Sheep, per lb. dressed weight	4d. „ 4½d.
Pigs (live weight), per lb. . . .	2½d. „ 3½d.
Turkeys, each	3/6 „ 13/-
Fowls, each	1/6 „ 3/6
Ducks, each	2/2 „ 3/3
Geese, each	4/- „ 5/-
Pigeons, each	1/- „ 1/3

(2) James Lawrence & Co., Ltd., Kimberley:—

Bran, per bag 100 lbs. . . .	7/- to 8/-
Barley, per bag 163 lbs. . . .	10/- „ 15/-
Beans, Sugar, bag 203 lbs. . . .	32/6 „ 37/6
Beans, Kafir, 203 lbs. . . .	9/6 „ 10/6
Chaff (Colonial), bale	4/6 „ 9/6
Chaff „ pressed, 100 lbs. . . .	3/- „ 4/-
Forage, per 100 lbs. (good)	5/6 „ 5/9
Forage, per 100 lbs. (inferior)	4/9 „ 5/-
Kafir Corn, S.A. mixed	8/- „ 9/6
Kafir Corn, White	8/6 „ 9/6
Boer Meal (Colonial), unsifted mixed	28/- „ 28/6
Boer Meal (Colonial), sifted mixed	30/6 „ 32/6
Flour (Colonial), per bag 100 lbs. . . .	16/6 „ 17/6
Yellow Mealies, Colonial, 203 lbs. . . .	9/6 „ 10/6
White Mealies, Colonial (hard) 203 lbs. . . .	9/6 „ 10/6
White Mealie Meal, 183 lbs. . . .	10/6 „ 11/6
Oats, per bag 150 lbs. . . .	9/6 „ 10/6
Lucerne Hay, per 100 lbs. . . .	4/6 „ 5/3

Onions, per bag 120 lbs. . . .	7/- to 10/-
Potatoes, per bag 163 lbs. . . .	12/- „ 17/6
Potatoes (local)	14/- „ 21/-
Tobacco, per lb. (good)	4d. „ 7d.
Tobacco, per lb. (inferior)	1d.
Wheat, per bag 203 lbs. . . .	23/- to 26/-
Butter, per lb. (fresh)	11d. „ 1/2
Butter (second quality)	9d. „ 10d.
Eggs, per dozen	1/1 „ 1/4
Ducks, each	2/- „ 2/9
Fowls, each	1/6 „ 2/3
Turkeys, each	3/6 „ 7/6
Hams & Bacon, per lb. . . .	
Salt, per bag	2/9 „ 3/6
Walnuts, per lb. . . .	
Dried Peaches, per lb. . . .	2d. „ 4d.
Dried Apricots, per lb. . . .	2d. „ 4d.
Lime, per bag	2/6 „ 3/-
Apples, per 100	2/- „ 6/6
Apples, per box	3/- „ 10/-
Guavas, per box	1/- „ 4/6
Oranges, per 100	2/- „ 4/6
Naartjes, per 100	1/- „ 3/6
Pine Apples, per dozen	1/- „ 1/6
Beans, Green, per lot	6d. „ 9d.
Cabbages, per dozen	1/6 „ 5/-
Pumpkins, per dozen	2/- „ 7/-
Cauliflowers, per dozen	2/- „ 6/-

(3) Wightman & Co., Ltd., Salisbury:—

Mealies	10/- to 10/6
Rapoko	9/- „ 10/-
Potatoes, per bag 150 lbs. . . .	18/6 „ 20/-
Forage	10/- „ 11/-
Manna Forage	6/- „ 7/6
Onions, per lb. . . .	2½d. „ 3d.
Munga	10/- „ 11/6
Beans	16/- „ 20/-

Monkey Nuts, 83 lbs. unshelled	8/6 to 10/-
Monkey Nuts, per lb. unshelled	1½d. „ 2d.
Pumpkins, per ton	40/- „ 60/-
Sweet Potatoes, per bag 150 lbs. . . .	17/- „ 18/-
Kafir Corn	9/- „ 10/-
Wheat	30/- „ 35/-

(4) Messrs. Whitfield & Co., Salisbury:—

Cows, Good Milkers ..	£20 to £25	Mules, not Inoculated ..	£20 to £25
Native Cows ..	£8 0	Horses, Imported ..	£25 to £30
Heifers, Colonial ..	£7 10	Donkeys, Colonial ..	£7 0
Heifers, Native ..	£5 0	Donkeys, German East	
Trained Oxen, Large ..	£12 10	Africa ..	£6 to £7
Trained Oxen, Ordinary ..	£10 0	Sheep, Colonial ..	£1 4
Mules, Inoculated ..	£30 0		

(5) Hubert Morisse & Co.:—

Barley, per 163 lbs. ..	11/6 to 14/6	Lucerne, per 100 lbs. ..	4/9 to 6/6
Bran, per 100 lbs. (Col.) ..	8/- ,, 8/3	Manna ..	3/3 ,, 4/9
Chaff, best, 100 lbs. ..	2/9 ,, 4/6	Transvaal Hay ..	6d. ,, 10d.
Eggs, per doz. (Colonial) ..	1/3 ,, 1/5	Oats, per 153 lbs. ..	7/9 ,, 12/10
Salt, per bag ..	5/4 ,, 5/6	Potatoes, best, per 153	
Forage (Transvaal) ..	6/3 ,, 6/9	lbs. ..	17/4 ,, 20/-
Forage (Colonial), best,		Potatoes, medium and	
per 100 lbs. ..	6/6 ,, 7/-	inferior ..	15/- ,, 17/3
Forage, med. and in-		Onions (Cape), 120 lbs. ..	8/- ,, 9/-
ferior, per 100 lbs. ..	3/9 ,, 5/9	Turkeys (Cocks) ..	5/- ,, 11/6
S. Meal, best fine ..	29/- ,, 31/-	Turkeys (Hens) ..	4/- ,, 5/-
Rye ..	15/6 ,, 17/-	Fowls ..	1/6 ,, 3/6
Wheat ..	19/6 ,, 23/6	Ducks ..	2/6 ,, 3/-
Mealies (Hickory King		Geese ..	4/6 ,, 5/-
Whites) ..	9/0 ,, 9/6	Pigeons ..	1/- ,, 1/3
Mealies (O.R.C. Whites) ..	9/- ,, 9/6	Butter (O.R.C.) ..	11d. ,, 1/3
Mealies (Yellow) ..	9/- ,, 9/8	Pumpkins, each ..	2d. ,, 4d.
Kafir Corn, per 203 lbs. ..	8/3 ,, 9/3	Beans, per 200 lbs.	
Hay, Sweet (Transvaal) ..	6d. ,, 1/1	(Sound) ..	13/6 ,, 46/-

(6) Johannesburg Produce Commission Agency:—

Bran, per 100 lbs. ..	8/- to 8/3	Oats, Seed (Clean), per	
Barley, per 150 lbs. ..	11/- ,, 13/6	153 lbs. ..	10/- to 11/-
Beans, per bag 203 lbs. ..	12/6 ,, 25/-	Oats, Feeding ..	7/6 ,, 9/-
Beans (Sugar), per 203		Onions, Yellow (Col.) ..	9/0 ,, 10/-
lbs. ..	30/- ,, 42/6	Onions, Local ..	6/- ,, 8/-
Chaff, per 100 lbs. ..	3/3 ,, 4/-	Potatoes, best Trans-	
Forage (Oathay), Best		vaal ..	18/- ,, 20/-
Forage (Oathay), Med. ..	5/0 ,, 6/0	Potatoes, best Natal,	
Forage (Oathay), Infer. ..	4/- ,, 4/9	Cape and O.R.C. ...	16/- ,, 17/-
Kafir Corn, Red ..	9/- ,, 9/6	Potatoes, best Medium	14/- ,, 15/6
Kafir Corn, White ..	8/- ,, 8/3	Potatoes, best Inferior	
Kafir Corn, Mixed ..	8/3 ,, 8/6	and Small ..	13/- ,, 14/-
Lucerne, per 100 lbs. ..		Potatoes, Sweet ..	4/- ,, 6/6
Dry ..	5/6 ,, 6/6	Peas (Dry), per 203 lbs. ..	11/3 ,, 11/9
Mealies, White ..	9/2 ,, 9/6	Tobacco, Transvaal Leaf,	
Mealies, Yellow ..	9/3 ,, 9/6	per lb. ..	2½d. ,, 5½d.
Monkey Nuts, per 100		Wheat, Transvaal ..	22/6 ,, 23/6
lbs. ..	9/- ,, 9/3	Wheat, Basutoland ..	20/- ,, 21/-
Rye ..	15/6 ,, 16/6	Sifted Boer Meal, per	
Manna, per 100 lbs. ..	3/6 ,, 4/3	200 lbs. ..	28/6 ,, 30/-
		Unsifted Boer Meal ..	22/6 ,, 27/6

SOUTH AFRICAN STUD BOOK.

A RECORD of all classes of Stock, the object being to encourage the breeding of Thoroughbred Stock and to maintain the purity of breeds, thus enhancing their value to the individual owner and to the country generally.

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For Orange River Colony—

E. J. MACMILLAN, GOVERNMENT BUILDINGS,
BLOEMFONTEIN.

A. A. PERSSE,

Secretary South African

Stud Book Association.

Government Notices.

No. 217 of 1907.

Department of Agriculture,

Administrator's Office,

Salisbury, 10th October, 1907.

AFRICAN COAST FEVER.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw as from the 1st October, 1907, the regulations promulgated by Government Notices No. 189 of 1906 and No. 185 of 1907, and declare that the following shall be of full force and effect in lieu thereof from that date within the province of Mashonaland and the fiscal division of Gwelo, as defined by the "Southern Rhodesia Boundary Regulations Amendment Regulations, 1898," which areas are hereby declared to be areas infected with a destructive disease :—

1. The movement of all cattle within the said area is prohibited save and except :—

- (a) On permission granted by an officer specially authorised thereto by the Administrator.
- (b) Within the boundaries of any single farm where such cattle are depastured.
- (c) Within any area of land enclosed by a substantial fence.
- (d) Within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp.
- (e) Within a radius of four miles of any native kraal situate within the boundaries of any native location or reserve, the site of such kraal shall be deemed to be the place where it is situated at the date of publication hereof, and as is further provided.

2. The movement of cattle for slaughter purposes shall be permitted under the written authority of an officer thereto duly authorised, subject to the following terms and conditions :—

- (a) That such cattle are moved by the most suitable route to the centre of consumption. All cattle travelling by road to be under the personal supervision of a responsible white man, or native approved of by the Cattle Inspector.
- (b) That before cattle may enter from a native district not included in any particular group of districts as defined in Section 6 (b) the written permission of owners, occupiers, or managers of all occupied land, and, in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass to the nearest station, siding, or centre of consumption is obtained; provided that in the event of such owners, occupiers, managers, or Native Commissioners refusing to grant such permission, the Controller of Stock may direct the issue of a permit of removal if satisfied that the necessary permission is withheld without good and sufficient cause.
- (c) That such cattle shall, on arrival at the centre of consumption, subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area, and there be quarantined and confined, and branded with the letters "V.D." on the near side of the neck under the supervision of a duly authorised officer.
- (d) That all cattle brought into any centre of consumption shall be disinfected by dipping or spraying at the public dipping station before being taken to the quarantine area.

- (e) That all cattle admitted to the quarantine area shall be slaughtered within 21 days of their admission, and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter. All such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and, if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (f) That intermediate depots, or concentration camps, for slaughter stock may be allowed at centres approved of by the Chief Inspector of Cattle, provided that no such camp shall be situated within less than a radius of five miles of any commonage, town lands, or grazing ground common to any mining camp, railway station or siding.

3. The movement of cattle required for *bona fide* mining, farming, breeding and dairying purposes and for private milk supplies may be permitted on the written authority of a duly authorised officer, subject to the following terms and conditions :—

- (a) That such movement shall take place subject to the conditions set forth in Section 2 (a) and (b).
- (b) That whenever such cattle shall at any place along the route have passed within a radius of less than five miles of an infected area, the cattle shall upon arrival at their destination be effectually isolated from all other cattle on the same land for a period of four weeks.
- (c) That whenever the cattle being removed shall at any portion of the route have passed within native districts where infected areas exist, the consent in writing to such movement be obtained from all owners of cattle on farms adjoining that to which movement takes place ; and in the case of native reserves of the Native Commissioners of the districts ; provided that should such consent be unreasonably withheld by any of the aforesaid persons the Controller of Stock may direct the issue of a permit.
- (d) That such cattle required for breeding and dairying purposes, or for private milk supplies, when moved to within the boundaries of the various commonages, town lands, or of grazing ground common to any mining camp or other centre where cases of African Coast Fever have occurred within 15 months, shall be confined in some enclosed place approved of by the local Cattle Inspector, and, if a case of African Coast Fever occur in such enclosure, shall not be liberated therefrom except in terms of Section 5 hereof, until 15 months after the last occurrence of African Coast Fever within the enclosure in which they are kept, nor shall they be allowed, after liberation, to run upon any of the land specified herein, unless such land has been free from African Coast Fever for a period of 15 months.
- (e) All cattle introduced in terms of the preceding sub-section (d) shall, on arrival, be taken direct to the Government dipping station and there be dipped or sprayed.
- (f) All cattle confined in terms of clause (d), and all calves born within the said enclosures, shall be sprayed every 14 days, as may be directed by the Cattle Inspector.
- (g) No cattle shall be moved from one native district to another unless with the permission of the local Veterinary Officer and the Cattle Inspectors of the districts to and from which such movement takes place.

4. All calves having less than two permanent teeth running within the boundaries of the various commonages, town lands, or grazing ground common to any mining camp, or other centres where cases of African Coast Fever have occurred within 15 months of the date of these Regulations, or born thereon after such date, shall be removed to some enclosed place approved of by the local Cattle Inspector, and shall not be liberated or allowed to run at large on such commonage, town lands or common grazing ground until 15 months.

after the occurrence of the last case of African Coast Fever within the enclosure in which they are confined, or upon such commonage, town lands or common grazing ground.

- (a) No calves shall be permitted to accompany working cattle travelling along the roads mentioned in Section 7, sub-section (c), and all calves born of such working cattle whilst travelling shall not be removed from the place where born.

5. For the purpose of cleansing an area of disease the Controller of Stock may, under the authority of the Administrator and on the advice of the Chief Inspector of Cattle, subject to such conditions as may be stipulated, permit the removal of calves and other cattle to an adjacent clean area.

6. The movement of working cattle other than those specified in Section 7 hereof may be permitted within the following areas and on the terms and conditions hereinafter set forth :—

- (a) Within a maximum radius of 15 miles of any working mine, or mine in course of development, for the purposes of such mine, provided that :—

- (1) Such cattle shall only be moved under permission of a duly authorised Officer, and shall be dipped every 14 days where a dipping tank is available within such area, or, in the absence of a dipping tank, be thoroughly sprayed with an insecticide.
- (2) Such permission shall not be granted where it conflicts with any other section of these regulations, or if such movement is considered to be dangerous to other cattle within the 15 mile radius.

- (b) Within the boundaries of the Gwelo and Lomagundi Native Districts, and within and between the boundaries of the following adjoining Native Districts : (1) Salisbury, North and South Mazoe ; (2) Hartley, Charter and Chilimanzi ; (3) M'tokos, M'rewas, Marandellas and Makoni ; (4) Inyanga, Makoni and Umtali (as defined by Government Notice No. 13 of 1899) ; (5) Along the road West of the Sabi River from Odzi Bridge to Makondo Copper Mine, subject to the following conditions :

- (1) That the movement will be permitted for such period as the Controller of Stock may in his discretion, and on the advice of the Chief Inspector of Cattle, deem expedient, provided that such permission may at any time be withheld or withdrawn without notice.
- (2) That all applications for removal shall be approved of by the Cattle Inspectors of the districts through which the cattle pass.
- (3) Provided that in the event of such Cattle Inspectors refusing to grant permits for the removal of cattle, the Chief Inspector may, on the advice of the local Veterinary Officer, direct the issue, if satisfied that the necessary permission is withheld without good and sufficient cause.
- (4) That all such cattle are dipped every 14 days where a tank is available, or, in the absence of a tank, are thoroughly disinfected by spraying.

7. The movement of " salted " or immune working cattle shall be permitted on the following terms and conditions :—

- (a) That such cattle have been registered and branded under the supervision of the Cattle Inspector with the brand " T.O. " on near shoulder and the registration number on near horn, in terms of Section 7, clauses (a) and (b) of Government Notice No. 109 of 1905.

- (b) That the movement of such cattle shall only take place under the written permit of a duly authorised officer and subject to the conditions that they are disinfected by dipping every 14 days, where a dipping tank is available, or, in the absence of a dipping tank, by thorough spraying with an insecticide.

(c) That movement of such cattle only shall be permitted :—

- (1) Along the main roads of the Melsetter District.
- (2) From Umtali to the Makondo Copper Fields.
- (3) From Melsetter to Umtali.

8. In the event of failure of pasturage or water on land on which cattle are located the movement of such cattle will be permitted, provided :

- (a) That such movement shall be to the nearest available pasturage by the most suitable route.
- (b) That written consent be obtained in terms of Section 2, clause (b) hereof.
- (c) That such movement shall be by permit only of a duly authorised officer and under the supervision of a responsible white man, or of a native approved of by the Cattle Inspector of the district.

9. All applications for the removal of cattle under Sections 2, 3 and 8 hereof shall be submitted to, and approved of by, the local Veterinary Officer before being granted.

10. All permits granted under the provisions of these Regulations shall specify the number and brands of cattle, route to be travelled and period allowed, and may define places of outspan, and all other conditions endorsed on such permits by the officer issuing the same shall be strictly observed.

11. All veldt-fed animals within the limits of the various commonages or town lands, or other centre where there is common grazing ground within the districts of Umtali and Melsetter and the scheduled area at Selukwe, upon which public dipping tanks have been established, shall be dipped therein at least once every 14 days ; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this regulation for such reasons as he may regard as sufficient.

12. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these regulations in respect of any dipping done at a public dipping tank :—

For Horned Cattle (six months old and over)	..	3d. per head.
For Horses and Mules	.. .. .	3d. „
For Calves (under six months) and Donkeys	..	2d. „
For Small Stock	.. .. .	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under the above tariff.

13. Any disinfecting by spraying required to be done under these regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed : provided that the Inspector may at his discretion carry out such disinfection with the assistance of and at the entire cost of the owner of the animals sprayed, the cost of such disinfecting being payable at the time of spraying.

14. Whenever the owner, occupier, or manager of a farm shall adopt means for cleansing his cattle running thereon, either by spraying or dipping or any other method permitted by these or any other regulations, the Cattle Inspector may order such natives or others as have cattle on the same farm to cleanse such cattle or any others before permitting them to enter or pass over such an area, and the Native Commissioner of the district in which such farm is situated may enter into an arrangement with the native owners of cattle, to cleanse such cattle at a charge to be mutually agreed upon between the said owner, occupier or manager and the said native owners.

15. Any person contravening the provisions of these regulations shall be liable to the punishments prescribed by the Ordinance, and in cases where no special punishment is prescribed by the said Ordinance to a fine not exceeding £20, or to a period not exceeding three months' imprisonment with or without hard labour in default of payment of any fine inflicted.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 295 of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 1st October, 1908

IMPORTATION OF STOCK.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Government Notice No. 8, of the 19th day of January, 1905, and so much of any other regulations as may be repugnant to or inconsistent with the subjoined regulations, which are hereby declared to be of full force and effect.

1. The importation of the following animals from the respective countries enumerated is prohibited, owing to the existence or supposed existence of destructive diseases affecting the said animals in the said countries:—

- (1) All animals from the island of Mauritius.
- (2) All animals from German South-West Africa and all animals except donkeys from German East Africa.
- (3) Pigs from the colonies of the Cape of Good Hope, Transvaal, and the Orange River Colony, the Bechuanaland Protectorate, the Tati Concession, and other countries in which swine fever exists, subject, however, to the exceptions contained in the proviso to this section.
- (4) Dogs from the territories of North-Eastern and North-Western Rhodesia and Portuguese East Africa; provided, however, that dogs from countries from which importation is permitted may be introduced through the port of Beira and brought direct into this Territory.
- (5) Sheep and goats from (a) the districts of Albany, Alexandria, Bathurst, Bedford, East London, Fort Beaufort, Humansdorp, Jansenville, Kingwilliamstown, Komgha, Peddie, Somerset East, Stockenström, Uitenhage, and Victoria East, in the Cape Colony; (b) the districts of Barberton, Lydenburg, Marico, Pretoria, Rustenburg, Waterburg, and Zoutpansberg, in the Transvaal; (c) Swaziland; (d) Portuguese Territory; (e) places north of the Zambesi River.

Provided, however, that the Controller of Stock may at his discretion permit the importation of pigs under six months of age for breeding purposes from the places mentioned in sub-section (3), and sheep and goats from the places mentioned in sub-section (5) hereof, on production of a certificate of a duly authorised Government veterinary officer that such animals are free from disease, have not been in contact with diseased animals, and have not come from an area where destructive disease has existed for twelve months previously.

2 The importation of organic manures, except guano, is strictly prohibited, and the importation of bone meal and bones required for fertilising or feeding purposes will only be permitted when accompanied by the certificate of a responsible and competent person that they have been thoroughly disinfected by treatment by superheated steam or other approved method. Any such manures, bone meal or bones introduced into Southern Rhodesia contrary to this regulation shall be liable to immediate destruction.

3. The areas set out in Schedule "A," and such further areas as may be added to the said schedule, shall be used in connection with pasture lands of the places to which they relate for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever.

4. The appointment of the areas set out in Schedule "B" hereto for the depasturing and quarantining of animals for slaughter in connection with the places therein mentioned is confirmed.

5. The several districts of Southern Rhodesia are hereby declared to be an area infected with scab amongst sheep and goats and the movement of all sheep and goats from any farm to beyond the limits thereof, or from their usual grazing ground within the limits of any town lands or native reserves to any other place, is prohibited, except under the written permit of an Inspector or Sub-Inspector. Such permit shall set forth the number and

description of animals to be moved, the route they shall travel and the period for which the permit shall be in force. In cases where it may appear necessary or desirable the person to whom any such permit is issued may be required to cause the animals referred to therein to be dipped before being moved.

6. The introduction of sheep and goats against which no prohibition exists may be permitted by rail, subject to the following provisions :—

- (1) Plumtree shall be regarded as the port of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto; provided, however, the Controller of Stock may allow the introduction of well-bred sheep or goats intended for sale or stud purposes without being previously dipped.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival; provided, however, that animals intended for immediate slaughter shall be exempt from dipping if marked with a distinctive brand on the back.

7. The introduction of sheep and goats against which no prohibition exists may be permitted by road, subject to the following provisions :—

- (1) M'Lala Drift and Fort Tuli shall be regarded as ports of entry.
- (2) All animals shall be accompanied by a certificate in the form set out in Schedule "C" hereto.
- (3) All animals shall be thoroughly dipped at their owners' expense within sixteen days after their arrival.

8. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by rail shall immediately report such arrival to the Veterinary Office at Salisbury, Bulawayo and Umtali respectively, and no such animal shall be detained at any intermediate station without the written authority of a Government Veterinary Surgeon.

9. The owner or person in charge of any horse, mule or donkey entering Southern Rhodesia by road shall immediately report such arrival at the police camp nearest to the place where such entry is made, and the officer in charge of such police camp shall immediately report to the Veterinary Department, which shall direct what steps are to be taken to test such animals with mallein, as in the following clause provided.

10. All horses, mules and donkeys upon entering Southern Rhodesia shall be tested with mallein, and the owner or person in charge of such animals shall, in all respects, carry out the lawful directions of the Inspector while such animals are being tested; provided that this regulation shall not apply to animals in transit by railway through Southern Rhodesia and which are not detained *en route*.

11. The Inspector may direct the detention of any animal, and its isolation for the purposes of such examinations and tests as may be deemed expedient during which period of isolation or detention it shall be maintained and tended at the expense of the owner. If in the case of any such animal a second injection of mallein, applied at an interval of not less than ten days, is followed by a reaction indicative of the existence of glanders, such animal shall be forthwith destroyed.

12. Horses, mules and donkeys lawfully in this Territory, and required for purposes necessitating frequent crossing of the border to and from Portuguese East Africa, may be allowed so to cross on such terms as to registration, branding, testing and other conditions as the Chief Veterinary Surgeon may from time to time deem expedient to prescribe.

13. All horses, mules and donkeys depastured on the town lands of Melsetter and Umtali or on any public outspan adjoining such lands, and within the following area known as the Penhalonga, Imbesa and Samba Valleys, as bounded by the Umtali Waterfall Range on the north, the divide following beacons 18, 24 and 27 on the east, the Christmas Pass Range on the south, and the Palmyran Range on the west, in the district of Umtali, shall be dipped every fourteen days, by or at the expense of the owner or person in charge of such animals, unless the local Veterinary Officer shall see fit to dispense with such dipping.

14. An Inspector may direct the thorough cleansing and disinfecting of trucks which may be reasonably suspected of being sources of infection of any destructive disease, and may direct the destruction of *truck fittings*, fodder, excreta or other matter or thing which may be reasonably calculated to convey such infection.

15. Any person contravening the provisions of these regulations, or the instructions or directions given in terms of these regulations, shall be liable in respect of each offence to a penalty not exceeding twenty pounds, or in default of payment to imprisonment with or without hard labour for a period not exceeding three months, unless where more or heavier penalties have by the aforesaid Ordinance, or by other regulations framed thereunder, been expressly provided.

W. H. MILTON,

Administrator

By command of His Honour the Administrator

F. J. NEWTON,

Treasurer

SCHEDULE "A."

Areas on or near pasture land used in connection with townships set apart for the quarantining of animals suffering from any destructive disease other than glanders, epizootic lymphangitis or African Coast Fever:—

1. For the township of Salisbury and its neighbourhood, the Government Farm Makabusi, as defined in Government Notice No. 13 of 1898, namely, about six miles from Salisbury on the Old Charter Road, and bounded on the north, north-east and west by the farm "Willowdale," and on the south and south-east by the Makabusi River.

2. For the township of Umtali, a triangular piece of land situate to the north-east of the township, being that portion of the farm "Birkley" which falls in British territory.

3. For the township of Melsetter, a piece of land included within those lines bounding the pasture lands laid out around the township, which are in common with the outspan in the west, Sawerombi on the north, and Westfield on the north-east, bounded further on the south by a line drawn from the common beacon of Westfield and Lindley to the common beacon of Fairfield and outspan.

4. For the township of Enkeldoorn, a piece of land about $2\frac{1}{2}$ miles due west of the township and bounded as follows: From a point about 400 yards above the junction of a stream running south of Enkeldoorn township with streams running west from the Police Camp; thence along the first stream to the junction aforementioned; thence along a valley running due south from the said junction to a point about 700 yards distant; thence in a north-westerly direction to a point on the top of a rise about 1,200 yards distant; thence in a straight line to the first-mentioned point.

5. For the township of Victoria, a strip of land half-a-mile in width lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills.

6. For the township of Gwelo, a triangular piece of ground within the reserved lands around Gwelo. It is bounded south by the Watershed Block along its boundary running from its joint beacon with Kanuck westwards to another beacon 1,518 Cape roods distant, bounded north-westwards by a line about 1,350 roods in length to the Inoculation Station, and bounded north-eastwards by a line from the first-mentioned beacon to the Inoculation Station, and about 1,400 roods in length. This piece of ground is called the Inoculation Camp.

7. For the township of Bulawayo, that portion of the commonage bounded on the west and north by the Bulawayo-Mafeking and Gwelo railway lines, on the east by the road known as "Hillside Avenue," on the south to the limits of the commonage and Hillside, known as "Napier's Lease," approximately 4,750 acres in extent.

SCHEDULE "B."

Areas set apart for depasturing and quarantining of animals for slaughter :—

SALISBURY.—Description of the area.—A piece of land, 400 acres in extent, situated on the Makabusi River, below Maggio's plot, towards the southern boundary of the Salisbury commonage.

BULAWAYO.—Description of the area.—That piece of fenced land situated on the Bulawayo commonage between the railway line, to the south, and the Solusi Road, adjoining and to the south-west of the Government dipping tank, in extent 1,000 acres, more or less.

GWELO.—Description of the area.—Starting from a point where the Ingwenia Road crosses the railway, along this road past the sanitary stables to a point a quarter of a mile west, thence in a line parallel with the railway to the Gwelo River, thence along the river to the commonage beacon No. 11, thence in a straight line to the Shamrock road where it is intersected by the Scout's Spruit, thence along the Shamrock road to where it joins Main Street extension along this to the railway line, and down this to the starting point.

UMTALI.—Description of the area.—Starting from a point at the south-east corner of the farm "Devonshire" and south-west of "Waterfall," up the stream to where it is joined by the stream commonly known as Rifle-butt Spruit, and up this spruit to a point 300 feet below Paulington Bridge. Thence almost due north on the west of Penhalonga Road to the sanitary pits and from the sanitary pits to the Cemetery, thence due west to the "Devonshire" line and along this line south to south-west corner beacon of "Waterfall."

SELUKWE.—Description of the area.—A piece of fenced land, in extent about 300 acres, situated on the farm "Sebanga" and adjacent to the township of Selukwe.

PENHALONGA.—Description of the area.—A piece of land bounded as follows :—To the northward by a line starting from the south-east beacon of the hotel stand to the south-west and south-east beacons of Crawford's butchery. To the eastward from the south-east beacon of Crawford's butchery to the northern boundary of the Penhalonga Proprietary Mines' ground. To the southward along the northern boundary line of the Penhalonga Proprietary Mines' ground. To the westward from the north-west beacon of the Penhalonga Proprietary Mines' ground to the south-east beacon of the hotel stand.

VICTORIA.—Description of the area.—A strip of land, half-a-mile in width, lying immediately to the west of the gunpowder magazine, and extending from the Macheke River to the Chekoto range of hills

SCHEDULE "C."

I, ...
residing at
in the district of in the
..... Colony, do solemnly and sincerely
declare that the animals enumerated below are free from any contagious
disease, including scab, and have not been in contact with any infected
animals within six months from date hereof, and that to the best of my
knowledge and belief such animals in travelling to* Station
will not come in contact with any animals amongst which scab or any other
contagious disease has existed during that period ; further, that such animals
were thoroughly disinfected by dipping on, and
will enter Southern Rhodesia within ten days of having been dipped.

And I make this solemn declaration conscientiously believing the same to
be true.

Declared to at on this..... day
of before me

.....
Resident Magistrate, Government Veterin-
ary Surgeon, Scab Inspector, or Police
Officer of district from which animals are
being sent.

Number and general description of animals being sent

 Owner's Name and Address.....

 Place in Southern Rhodesia to which animals are being sent

* Station within Colony of origin.

CERTIFICATE ISSUED UNDER PROVISIONS OF SECTION I, GOVERNMENT NOTICE No. 295 OF 1908.

This is to certify that the animals enumerated below are, in my opinion, free from any destructive disease, including scab, and to the best of my knowledge and belief have not been in contact with any infected animals nor come from, or through, a locality where any such disease is known to exist or has existed for twelve months from date hereof.

Date

Place

.....
 Signature of Government Veterinary Surgeon

Number and general description of animals..... Pigs, ... Sheep, ..
 Goats.

Place from which animals are to be sent.....

Owner's Name and Address.....

Place in Southern Rhodesia to which it is desired to send the animals

.....
 No. 110 of 1908.

Department of Agriculture,
 Administrator's Office,

Salisbury, 16th April, 1908.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal so much of the Regulations published under Government Notice No. 187, dated the 26th of July, 1906, as relate to the importation of cattle from the Colony of the Cape of Good Hope and the United Kingdom of Great Britain and Ireland, and make the following provisions in lieu thereof:—

1. The importation of cattle may be permitted from the Colony of the Cape of Good Hope and the Orange River Colony on the following terms and conditions:—

- (1) A permit shall be required from the Chief Inspector which may contain such conditions as shall from time to time appear expedient.
- (2) Applications for permission to import shall be in the form "A" attached hereto, and accompanied by a declaration in the annexed form "B."
- (3) The importation of cattle with more than two permanent central incisor teeth shall not be permitted.
- (4) All importations shall be by rail, and for the purposes thereof Bulawayo shall be regarded as the port of entry.

- (5) All cattle imported in terms of these Regulations shall on arrival at Bulawayo, Salisbury, or Umtali be removed to a place of quarantine under the supervision of an Inspector of Cattle, there to be submitted to such examination and tests as the Chief Inspector may direct. If such examination or tests disclose the existence of any destructive disease the cattle shall be immediately destroyed and the carcasses thereof disposed of in such manner as a Government veterinary surgeon may authorise or require. The Chief Inspector may permit of any examination or tests as aforesaid being dispensed with in the case of cattle in transit by rail for any place beyond the boundaries of Southern Rhodesia.
 - (6) All expenses or losses incident to quarantine, examination, testing or destruction as aforesaid shall be borne by the owner of the cattle.
2. The importation of cattle from the United Kingdom of Great Britain and Ireland may be permitted under the following terms and conditions:—
- (1) Importation shall be through and direct from the coast ports of the Cape Colony, and there shall be a consignment note or other satisfactory evidence that cattle so imported have come direct from Great Britain or Ireland.
 - (2) The provisions of sub-sections (5) and (6) of section 1 hereof shall apply to importations in terms of this section.
3. No person shall import cattle in terms of these Regulations except for his own use, provided however that permission may be granted to import for others on the applicant disclosing the name of the person or persons for whom he proposes to act.
4. Any person introducing cattle in contravention of these Regulations, or failing to comply with any conditions attached to permits to import, or furnishing applications, declarations, or other necessary documents known to be false in any material particular, or failing to comply with all lawful directions as to quarantine, examination, testing, destruction or disposal of carcasses, shall be liable to a fine not exceeding £20 for each animal in respect of which such offence shall have been committed, and in default of payment to imprisonment with or without hard labour for any period not exceeding six months, unless higher or greater penalties shall have been provided for such offences by the "Animals Diseases Consolidation Ordinance, 1904," provided however that the penalties imposed by these Regulations shall not exempt any cattle from destruction in terms of the aforesaid Ordinance.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

ANNEXURE "A."

APPLICATION FOR CATTLE IMPORTATION PERMIT.

GOVERNMENT NOTICE No. 110 OF 1908, SECTION 1 (2).

1. Applicant's Name and Address.....
2. Number and Class of Cattle to be imported.....
3. Area or Farm and District where Cattle are at present located.....
4. Area or Farm and District to which Cattle are to be moved.....

Applicant's Signature.....

Date

Application

Permit No.

No. 60 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 1st April, 1909.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and repeal Government Notice No. 124 of 1908, and do hereby declare and make known that, notwithstanding anything to the contrary elsewhere provided, the importation of cattle for *bona fide* slaughter purposes may be permitted into the Umtali district from the adjoining Portuguese territory, under the following terms and conditions:—

- (1) The importation and disposal of cattle, introduced in terms of these regulations, shall be under the absolute control and direction of the local Veterinary Surgeon or other duly appointed officer, and shall be regulated by the requirements of consumption.
- (2) The importation shall be by rail only, and all cattle shall be detrucked at the slaughter enclosure and immediately confined therein.
- (3) All cattle admitted to the slaughter area shall be immediately branded with the letters "V.D."
- (4) All cattle admitted to the slaughter area shall be slaughtered within ten days of their admission, and under no pretext whatever shall cattle so admitted be permitted to leave the said area alive; all such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and if found wandering outside the said area or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock.
- (5) No meat shall be removed from the said area without special permission unless it is entirely free from skin and ears.
- (6) The hides of animals slaughtered in the said enclosure shall be immediately immersed in an approved insecticide for a period of not less than twelve hours, and shall not be removed from the said enclosure unless accompanied by a certificate signed by a Veterinary Surgeon that they have been satisfactorily disinfected and dried.
- (7) Any person contravening the provisions of these regulations or the instructions or directions of the local Veterinary Surgeon or other duly authorised official, given in terms of these regulations, shall be liable, in respect of each offence, to a penalty not exceeding £20, or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding three months, unless where more severe or heavier penalties have, by the aforesaid Ordinance, been expressly provided.

W. H. MILTON,
Administrator

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

—————
No. 87 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 28th April, 1909.

IMPORTATION OF CATTLE.

UNDER and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel Annexure "B" referred to in sub-section (2) of section 1 of Government Notice No. 110

of 1908, and in place thereof do substitute the following which shall, from date of publication hereof, be the form required to accompany Annexure "A," also referred to in aforementioned sub-section, viz.:—

ANNEXURE "B."

I, ..., residing on the farm
 in
 do solemnly and sincerely declare that the animals enumerated below have been in my possession since birth, and that lung sickness, pleuro-pneumonia or other contagious or infectious disease has not existed amongst any of my cattle, nor on my farm, nor among any cattle with which these animals have been in contact within the last four years, and that these animals have never been exposed for sale in any public market or stock fair nor been in contact with strange cattle, and that to the best of my knowledge and belief such cattle in travelling to..... Station (*i.e.*, Station where cattle are to be trucked) will not come into contact with any animals amongst which lung sickness or any other contagious or infectious disease has existed during that period.

And I make this solemn declaration conscientiously believing the same to be true.

Declared to at..... on this.....
 day of....., before me.....
 Resident Magistrate for the district of.....
 Number of Animals,..... Bulls..... Heifers, Breed.....
 Seller's Name and Address.....
 Purchaser's Name.....
 Place in Southern Rhodesia to which animals are being sent.....

W. H. MILTON,
 Administrator.

By command of His Honour the Administrator in Council

F. J. NEWTON,
 Treasurer.

No. 268 of 1907.

Department of Agriculture,
 The Treasury,

Salisbury, 26th December, 1907.

REMOVAL OF CATTLE FOR SALE.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred upon me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The assembly of cattle for purposes of sale by auction or otherwise may be permitted at such places and under such conditions as the Chief Inspector may from time to time prescribe.

2. The movement of cattle into the province of Mashonaland and the fiscal division of Gwelo from other places in Southern Rhodesia may be permitted under such conditions as the Chief Inspector may from time to time prescribe.

3. The granting of permits for the purposes of Sections 1 and 2 hereof and the nature of the conditions to be attached thereto shall be at the absolute discretion of the Chief Inspector.

4. Any person contravening the provisions of these Regulations or the conditions attached to permits issued thereunder shall be liable to a fine not exceeding £20 or in default of payment to imprisonment with or without hard labour for a period not exceeding three months.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 356 of 1908.

Department of Agriculture,
Administrator's Office,

November, 1908.

MOVEMENT OF CATTLE INTO MATABELELAND.

NOTWITHSTANDING anything to the contrary contained in the Regulations published under Government Notices Nos. 188 of 1906 and 217 of 1907, I, under and by virtue of the powers conferred on me by the "Animals Diseases Consolidation Ordinance, 1904," do hereby provide as follows:—

1. The movement of cattle from the Province of Mashonaland into the Province of Matabeleland and from the Fiscal Division of Gwelo into other parts of Matabeleland may be permitted under such conditions as the Chief Inspector may from time to time prescribe, provided, however, that such movement shall not be permitted in respect of cattle imported from the country to the North of the Zambesi River until they shall have first remained for a period of at least twelve months in the Province of Mashonaland or the Fiscal Division of Gwelo.

2. The granting of permits for the purposes hereof, and the nature of the conditions to be attached thereto, shall be at the absolute discretion of the Chief Inspector.

3. Any person contravening the provisions of these regulations, or the conditions attached to permits issued thereunder, shall be liable to a fine not exceeding £20, or, in default of payment, to imprisonment with or without hard labour for a period not exceeding three months.

By Command of His Honour the Administrator in Council.

No. 39 of 1909.

Department of Agriculture,

Administrator's Office,

Salisbury, 11th March, 1909.

MOVEMENT OF CATTLE, PROVINCE OF MATABELELAND.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 188 of 1906 and 216 of 1907, and declare the following to be of full force and effect in lieu thereof within the province of Matabeleland, exclusive of the district of Gwelo, as described and defined by section 4 (c) of the Southern Rhodesia Boundary Regulations Amendment Regulations, 1898, which is hereby declared to be an area infected with a destructive disease, and is hereinafter called the said area.

2. The movement of all cattle within the said area is prohibited save and except

- (a) on permission granted by the local Cattle Inspector ;
- (b) within the boundaries of any single farm where such cattle are depastured ;
- (c) within an area of land enclosed by a substantial fence ;
- (d) within a radius of four miles from any native kraal situate within the boundaries of any native location or reserve, and as hereinafter further provided.

3. The movement of cattle for slaughter, grazing, *bona fide* farming, mining or breeding purposes, or for private milk supplies, shall be permitted under the written authority of an official thereto duly authorised, subject to the following terms and conditions :—

- (a) that the written permission of owners, occupiers, or managers of all occupied land, and in the case of native reserves, of the Native Commissioner of the district over which such cattle shall pass, is first obtained ; provided that in the event of such owners, occupiers, managers or Native Commissioners refusing to grant permission, the Controller of Stock may direct the issue of a permit of removal, if satisfied that the necessary permission is withheld without good and sufficient cause ;
- (b) that such cattle shall, before being moved, be thoroughly disinfected by dipping or spraying, to the satisfaction of the officer issuing the permit, and at the expense of the owner of such stock, and, if intended for slaughter, shall where possible be branded, under the supervision of the officer issuing the permit, with the letters " V.D." on the near side of the neck ;
- (c) that cattle intended for slaughter shall, on arrival at destination subject to the terms of clause (d) hereof, be immediately taken to the prescribed quarantine area and there be quarantined and confined, and, where not branded in terms of clause (b) hereof, be similarly branded under the supervision of a duly authorised officer ;
- (d) that all cattle intended for slaughter brought to their destination and not disinfected by dipping or spraying, in terms of clause (b) hereof, shall be immediately taken to the public dipping station and there be thoroughly dipped or sprayed before being taken to the quarantine area ;
- (e) that all cattle admitted to the quarantine area shall be slaughtered within twenty-one days of the admission and only be permitted to leave the area for the purpose of being driven to the abattoir for slaughter ; all such cattle shall, after admission to the said area, be considered as likely to be infected with disease, and if found wandering outside the said area, or in possession of any person, may be destroyed under an order of the Chief Inspector or Controller of Stock

4. The movement of working cattle may be permitted under the following conditions only :—

Within the said area from private farms, mines and trading stations to any centre of consumption, or to or from a railway station or siding, or to and from any other farm under the permit of a duly authorised officer, which permit shall fully set forth the route to be traversed ; provided that no permit shall be issued until the person applying for the same shall produce the written consent of owners, occupiers or managers of occupied lands proposed to be traversed, and in the case of native reserves, of the Native Commissioners, and that such cattle, before being moved, be thoroughly disinfected by dipping or spraying at the expense of the owner, and to the satisfaction of the officer issuing the permit ; provided, further, that in the event of such consent being unreasonably withheld, the Controller of Stock may direct the issue of a permit.

5. All applications for the removal of cattle from one native district to another shall be submitted for the approval of the Government Veterinary Surgeon at Bulawayo and the Cattle Inspector of the district to which the removal is to be made.

6. All permits granted under the provisions of this notice shall specify the number and brands of cattle, route to be traversed, and time allowed for each journey. Any breach of these or other conditions endorsed on the permit by the issuing officer shall be deemed a contravention of these Regulations, in terms of section 9 hereof.

7. All veld-fed animals within the limits of the various commonages or townlands, or other centres where there is a common grazing ground and upon which public dipping tanks have been established, shall be dipped therein at least once every fourteen days; provided that the Controller of Stock may, on the advice of the Veterinary Department, direct the temporary suspension of this Regulation, for such reasons as he may regard as sufficient.

8. The following charges shall be paid at the time of dipping by the owner of the cattle or other animals required to be dipped under these Regulations, in respect of any dipping done at a public dipping tank:—

For Cattle (over six months)	..	..	3d. per head.
„ Horses and Mules	..	..	3d. „
„ Calves (six months and under)	..	..	2d. „
„ Small Stock	..	..	½d. „

with a minimum charge of 6d. for any number of animals not aggregating such fee under tariff.

9. Any disinfecting by spraying required to be done under these Regulations shall be carried out with an approved insecticide by the owner of the animals so sprayed; provided that the Inspector may, at his discretion, carry out such disinfection, with the assistance of and at the entire cost of the owners of the animals sprayed, the cost of such disinfection being payable at the time of the spraying.

10. Any person contravening any of the provisions of these Regulations shall, upon conviction, be liable, in respect of each offence, to the fines and punishments prescribed by the Ordinance; and, in the cases where no special punishment is provided, to a fine not exceeding £20; or, in default of payment, to imprisonment, with or without hard labour, for any period not exceeding three months, unless the penalty be sooner paid.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer

—————
No. 101 of 1909.

Department of Agriculture,

Administrator's Office,

Salisbury, 19th May, 1909.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare the disease amongst live stock, due to the organism known as *Trypanosoma Dimorphon*, to be a destructive disease within the meaning of the said Ordinance.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 102 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 19th May, 1909.

UNDER and by virtue of the powers in me vested by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby declare the native district of Hartley, as bounded and described in Government Notice No. 13 of 1899, to be an area infected with the disease amongst live stock due to the organism known as *Trypanosoma Dimorphon*, which disease has, by Government Notice No. 101 of 1909, been declared a destructive disease within the meaning of the said Ordinance.

And I do further declare and make known that until further notice no animal within the meaning of the Ordinance shall be permitted to be moved from within the said area to any place without the said area.

Provided, however, that animals in transit by rail, coming from beyond the limits of the said district, shall be allowed to pass through the district, if not removed from the trucks in which they are being conveyed within the limits of the said district.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 45 of 1909.

Administrator's Office,

Salisbury, 13th March, 1909.

RABIES.

UNDER and by virtue of the powers vested in me by the "Animals Diseases Consolidation Ordinance, 1904," I do hereby cancel and withdraw the Regulations promulgated by Government Notices Nos. 42, 156 and 228, of 1907, except as to acts done or penalties incurred at the date of the coming into force of this Notice, and except as to officers appointed under Government Notice No. 286 of 1906, whose appointments shall remain valid for the purposes of this Notice, and declare the following Regulations shall have full force and effect in lieu thereof:—

1. All and several the various native districts of Southern Rhodesia are hereby declared to be areas infected with the disease of rabies.

2. Subject to any penalty a dog owner may have incurred under Government Notice No. 285 of 1906 by not registering his dog before the first day of February, 1907, the owner of any unregistered dog liable to registration may register the same at any time after the said date.

3. On and after the date of this Notice becoming operative the owner of every dog arriving at the age of three months, and the owner of every dog imported into Southern Rhodesia after that date, shall register such dog with an official appointed for that purpose, provided that this provision shall not apply to any municipality, township or similar area in which provision for registration exists and is duly enforced.

4. A registration badge shall be issued for each and every dog registered and the said badge shall be attached to a proper and sufficient collar to be supplied by the owner, which must be placed and kept on each dog registered.

5. A fee to cover the cost of registration and supply of badge in the amount of sixpence will become demandable and payable on registration of each dog.

6. Any dog found at large after the date of this Notice becoming operative, not having and bearing a registration badge duly issued by an official or the local authority, may be summarily destroyed by any person.

7. Any Magistrate, Police Officer, Native Commissioner, Government Veterinary Surgeon, or other official vested with the performance of functions under the "Animals Diseases Consolidation Ordinance, 1904," may, on it appearing to him that any dog or other animal is showing symptoms which justify investigation as to whether such dog or animal is suffering from rabies or not, order the proper detention, isolation and control of such dog or animal, either in the hands of the owner or at some other suitable place.

8. Should any dog show symptoms which lead to the suspicion that such dog may be suffering from rabies, the owner thereof shall forthwith notify the fact to the nearest official vested with powers under these Regulations, who shall immediately report the same to the Chief Veterinary Surgeon, and shall either destroy the said dog or isolate and secure it for further observations.

9. On its appearing that any animal is actually suffering from rabies, any of the above-mentioned officials may order the destruction of such animal, or may himself destroy it, and may further take control of or destroy, if deemed necessary, any animal which has been in contact with a rabid animal or an animal suspected of being rabid.

10. The carcasses of all animals destroyed on account of their being infected with rabies shall be thoroughly burnt by the person or official destroying them, save that such parts as may be required for scientific investigation may be retained under proper precautions. In any case in which a human being has been bitten by a rabid animal, the head of such animal shall, if possible, be taken and sent to the nearest veterinary official.

11. In the event of any outbreak of rabies occurring, all owners of dogs within fifteen miles of such outbreak, or such other area as may be fixed, shall, on notification by any of the above-mentioned officials, or by Government Notice in the *Gazette*, at once place and keep their dogs in a safe enclosure, or chained up, for a period of not less than six weeks from such notification, or such other period as may be fixed, but may be taken out for exercise if kept on a chain or leash held by the person exercising them.

12. Any dog found at large in a notified area at any time during the prescribed period may be summarily destroyed by any person, and the owner or person responsible for the custody of such dog shall be liable to the penalty hereinafter laid down.

13. Any person contravening any of the above Regulations, or failing to carry out any of the provisions thereof, shall be liable, on conviction, to a fine not exceeding £10 for each offence; or, in default of payment, to imprisonment, with or without hard labour, for a period not exceeding one month.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 249 of 1908.

The Treasury,

Salisbury, 27th August, 1908.

PROTECTION OF TREES.

IT is hereby notified for public information that any person who shall cut down for use as fuel, or for any other purposes than *bona-fide* farming, mining or manufacturing purposes, or cause to be so cut down the "Wild Westeria" (native name M'Pakwa or M'poea) tree, will be liable to prosecution for contravention of the provisions of the Forest and Heritage Preservation Act 1859, and upon conviction to a fine not exceeding £100, or to imprisonment with or without hard labour for a term not exceeding six months, or to such fine and imprisonment, or to such imprisonment without a fine.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator,

F. J. NEWTON,

Treasurer.

SUMMARY OF "THE GAME LAW CONSOLIDATION ORDINANCE, 1906," AND REGULATIONS ISSUED THEREUNDER.

The Ordinance divides the game into three distinct classes, described as follows :—

- (a) Birds and Small Buck.
- (b) Bushbuck, Hartebeest, Impala, Lechwe, Pookoo, Roan and Sable Antelope, Sitatunga, Tasessibe, Waterbuck and Wildebeest.
- (c) Royal Game, which includes Eland, Elephant, Giraffe, Gemsbok, Hippopotamus, Inyala, Koodoo, Ostrich, Rhinoceros, Springbuck and Zebra.

The shooting season for Class "A" is as follows :—

In Mashonaland :

Birds from 1st May to 30th September.

Small Buck from 1st May to 31st October.

In Matabeleland :

Birds and Small Buck from 1st May to 31st October.

To shoot in Class "A" a licence costing £1 per annum is required. This entitles holders to hunt in both Provinces during the open season.

Class "B."—The season opens on 1st July and closes on 30th November in both Provinces. The licence fee is £25 for non-residents and £5 for persons having their domicile in Southern Rhodesia. This licence entitles the holder to shoot up to 15 head, which number may be increased to a total of 25 upon payment of a further sum of £15 in the one case and £5 in the other.

Class "C."—The Administrator may, if he is satisfied that the animals are actually required for scientific purposes, grant to the holder of a game licence permission to shoot or capture any of the species included in this Class. Such permit requires a £5 stamp. Applications in writing, together with proof of *bona-fides*, should be addressed to the Secretary for Agriculture.

Game for Farming Purposes.—Permits are granted for the capture of Eland, Ostrich, Zebra or other animals for the purposes of breeding or farming. Such permits require a stamp of the value of £1 and remain in force for six months. Application, accompanied by a sworn declaration, should be made through the Secretary for Agriculture or the Civil Commissioner of the district.

Game Injuring Crops.—The occupier of any cultivated land or any person acting under the authority of such occupier, may at any time destroy game actually doing damage in such land.

Elephants on occupied farms. Melsetter.—The destruction of Elephants when found on occupied farms on the High Veldt in Melsetter District is authorised (*Vide* Government Notice No. 284 of 1908).

Tsetse Fly, Hartley District.—Government Notice No. 40 of 1909 withdraws the Close Season for Class "B" in a certain area in the Hartley District until 30th June, 1910, and transfers from Class "C" to Class "B" Eland, Koodoo, and Zebra so far as that area is concerned. This means that these species may be shot by Residents of Southern Rhodesia on a £5 licence, and by non-Residents on a £25 licence, in this area, at any time up to the 30th June, 1910, in addition to the game described in Class "B."

Game in Class "A" may be hunted in the close season ending 30th April, 1909, on private land in the Melsetter District by holders of a licence.

Protected Areas.—No game may be hunted or killed within the limits of the Commonages or Townlands of Salisbury, Bulawayo, Umtali and Melsetter; within a radius of two miles of the Court House, Gwelo, or within the Urungwe Game Sanctuary, as defined by Government Notice No. 237 of 1906.

"Locust Birds" are strictly protected, *vide* Government Notice No. 121 of 1907.

Export of Game.—No living Game or the Eggs of any Game birds may be exported beyond the limits of Southern Rhodesia without a written permit.

Shooting on Private Land.—A licence does not entitle the holder thereof to shoot on private land without the permission of the landowner.

No. 128 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th June, 1909.

GAME LAW CONSOLIDATION ORDINANCE, 1906.

UNDER and by virtue of the powers vested in me by the "Game Law Consolidation Ordinance, 1906," I do hereby declare and make known that the area described in section 1 of Government Notice No. 40 of 1909 shall be extended and include the area bounded as follows:—

From the Railway bridge on the Umfuli River thence north-westwards along the Umfuli River to where it joins the Umniati River, thence southwards along the Umniati River to where it joins the Umsweswe River, thence eastwards along the Umsweswe River up to the drift at the Lydia Mine, thence along the old road from Lydia Mine to Etna Mine and to Inez Mine, thence northwards along the road from Inez Mine to Hartley, thence in the direction of the Railway bridge to the starting point on the Umfuli River.

F. J. NEWTON,
Acting Administrator.

By command of His Honour the Acting Administrator in Council.

P. D. L. FYNN,
For Treasurer.

No. 129 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th June, 1909.

UNDER and by virtue of the powers vested in me by sub-section (2) of section 4 of the "Game Law Consolidation Ordinance, 1906," I do hereby suspend the operation of sections 5 and 12 of the said Ordinance in regard to all game in Class "B" and the following game in Class "C," viz., eland, koodoo, zebra and Burchell's zebra or quagga, within the area described in section 1 of Government Notice No. 40 of 1909, as amended by Government Notice No. 128 of 1909.

F. J. NEWTON,
Acting Administrator.

By command of His Honour the Acting Administrator in Council.

P. D. L. FYNN,
For Treasurer.

No. 9 of 1907.

NORTH-WESTERN RHODESIA.

WHEREAS there is reason to believe that certain diseases in cattle exist in the Territory of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, and it is therefore expedient to take measures to prevent the spread of such diseases to North-Western Rhodesia.

Now, therefore, under and by virtue of the powers in me vested by Section 2 of His Excellency the High Commissioner's Proclamation, No. 18 of 1906, bearing date the 31st day of July, 1906, I do hereby order and declare and make known as follows:—

1. That Government Notices, No. 2 of 1902, and No. 11 of 1906, are hereby withdrawn, and the following Regulations substituted:

2. The introduction of any bull, ox, cow, heifer or calf or the meat of any such animals, into the Territory of North-Western Rhodesia from the Territories of Southern Rhodesia, the Bechuanaland Protectorate, German West Africa, Portuguese West Africa, and Portuguese East Africa, is prohibited until further notice.
3. No person shall introduce into the Territory of North-Western Rhodesia from the Territories aforesaid, any horse, mare, gelding, mule, donkey, sheep, goat or pig, horns or skins, or any kind of vehicle, wagon gear, trek gear, or harness, without having first obtained the special permission in writing of a District Commissioner, Civil Commissioner, or other person thereto authorized by me; and such animals, horses, skins, vehicles, gear, or harness, shall enter the Territory of North-Western Rhodesia at such place, and under such conditions as regards quarantine and disinfection, as shall be ordered by the person issuing such written permission as is above described.
4. Whenever any conditions as to quarantine, isolation, disinfection or otherwise, are imposed, such conditions shall be fulfilled at the sole risk and expense of the owner, consignee, or other person concerned.
5. All live stock imported into the Territory by rail by way of Victoria Falls and Livingstone, shall be inspected at Livingstone Station, and, whenever disinfection is ordered, shall be disinfected at that Station.
6. In the case of live stock consigned to any point on the railway line north of Livingstone Station, the officer authorized to issue the written permission aforesaid shall further order the disinfection of the truck or horse-box in which such stock is being conveyed. Such disinfection shall be carried out at the expense of the owner or consignee of the stock, or other person concerned therein.
7. Consignors and importers of live stock shall give not less than seven days' notice of the arrival of such stock at Livingstone Station. Such notice shall be given to the Civil Commissioner, Livingstone, or to such other official as may hereafter be appointed.

ROBERT CODRINGTON,
Administrator.

By command of His Honour the Administrator,

HENRY RANGELEY,
Acting Secretary.

Administrator's Office,
Livingstone, North-Western Rhodesia,
30th September, 1907.

Ordinance No. 1, 1908.]

[Promulgated 18th December, 1908.

SOUTHERN RHODESIA.

AN ORDINANCE TO FURTHER AMEND THE LAW WITH REFERENCE TO THE BRANDING OF STOCK.

BE IT ENACTED by the Administrator of Southern Rhodesia, with the advice and consent of the Legislative Council thereof, as follows:—

1. Sections 7, 8, 9, 10 and 13 of "The Brands Ordinance, 1900" (hereinafter referred to as the said Ordinance), and so much of any other law as is repugnant to or inconsistent with the provisions of this Ordinance are hereby repealed; but such repeal shall not be taken to affect the validity of any brand duly registered at the time of coming into operation of this Ordinance.

2. No person shall have the right of claiming to have any special form or design of brand allotted to him, but any person requiring a brand shall, on application, and on payment of the prescribed fee, have a brand allotted to him by the Registrar.

3. Section 23 of the said Ordinance is hereby amended by the addition of the following sub-section:—

“(6) The system and procedure to be observed by the Registrar in allotting brands.”

4. This Ordinance may be cited for all purposes as the “Brands Ordinance Amendment Ordinance, 1908.”

Above is the text of the Ordinance passed during the last Session of the Legislative Council, the object of the Ordinance being to so amend the Brands Ordinance, 1900, as to permit of the system of branding known as the “Three piece system.”

Following are the regulations promulgated under the Ordinance, and which brought the new system of registration into operation on 7th January, 1909

No. 391* of 1908.

Department of Agriculture,

Administrator's Office,

Salisbury, 17th December, 1908.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

UNDER and by virtue of the powers vested in me by “The Brands Ordinance, 1900,” as amended by the “Brands Ordinance Amendment Ordinance, 1908,” I do hereby cancel and withdraw the Regulations published under Government Notice No. 204 of 1900, and declare the following shall be in force in lieu thereof, from and after the 7th January, 1909:—

1. The Registrar of Brands shall have his office in the Agricultural Department. With the exception of the Magistrate of Salisbury, the Magistrate in each district of Southern Rhodesia, and the Assistant Magistrate in each sub-district, shall be a deputy Registrar of Brands for the magisterial district or sub-district to which he is appointed. The offices of the Deputy Registrars of Brands shall be the offices of the several Magistrates.

2. (a) The form of application for registration of a brand shall be that marked “A” in the schedule attached to this Notice.

(b) The form of a certificate of registration shall be that marked “B” in the said schedule.

(c) The form of a transfer of a brand from one registered proprietor to another shall be that marked “C” in the said schedule.

(d) The form of a certificate of such transfer shall be that marked “D” in the said schedule.

3. Each Deputy Registrar of Brands shall keep a register, in the form of Schedule “E” hereto, of all brands allotted within his district under the provisions of the Ordinance.

4. Save as hereinafter provided, every registered brand shall consist of two letters and a numeral of plain and uniform pattern; and the first of the letters shall indicate the magisterial district or sub-district in which the holding is situate on which the brand is to be used, and shall be placed above the numeral and letter comprising the brand, so as to be in triangular form.

5. One brand and no more shall be allotted to any person in one magisterial district or sub-district.

6. The size of the characters branded on stock shall not be more than three inches in height nor more than two inches in width.

7. An applicant for a brand shall be allotted the next vacant brand assigned to the district in which he is located, as set forth in Schedule “F” hereof.

8. Each Deputy Registrar shall keep a list of brands assigned to his district, for the inspection of applicants for brands.

9. There shall be payable to the Registrar or Deputy Registrar:—

(a) For every separate registration of a brand, 5s.

(b) For every transfer of a brand, 5s.

10. All brands shall be imprinted on stock as follows :—

(a) In the case of horses, mules or donkeys, the first brand shall be imprinted either on the near side of the neck or near rump, and any second or subsequent brand shall (where there is sufficient space for such purpose) be imprinted on the same part of such animal, and at a distance of not less than one and a half inches from and directly underneath last imprint, according to the table herein set forth.

Where there is not sufficient space for the purpose, then such second or subsequent brand shall be imprinted on the part of such animal next in order, according to the following table :—

- i. Off Neck or Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(b) In the case of cattle, the first brand shall be imprinted on the near rump or thigh of the animal, and every second or subsequent brand shall be imprinted at a distance of not less than one and a half inches from and directly underneath the brand last imprinted, according to the following table :—

- i. Off Rump (or Thigh) ;
- ii. Near Shoulder (or Top of Arm) ;
- iii. Off Shoulder (or Top of Arm).

(c) In the case of sheep and goats, the first brand shall be imprinted on the near shoulder, and all second or subsequent brands in the following order :—

- i. On Near Side or Ribs ;
- ii. Near Rump (or Thigh) ;
- iii. Off Shoulder ;
- iv. Off Side or Ribs ;
- v. Off Rump (or Thigh).

(d) In the case of ostriches :—

- i. On near Thigh ;
- ii. On Off Thigh.

11. Each proprietor of a registered brand shall have the right, in addition to imprinting his brand in the manner above prescribed, to place such brand on the ears of such animals by punching, tattooing or ear-rivets.

12. The owner of any brand may surrender the same, and the Registrar shall, on receipt of notice thereof, cancel the registration by notice in the *Gazette*.

13. When it appears to the Registrar, upon the report of a Deputy Registrar, Native Commissioner, or Cattle Inspector, that a registered brand is not in use, he may cause notice thereof to be given to the owner thereof, calling upon him to show cause why the same should not be cancelled ; if cause is not shown to the satisfaction of the Registrar within six months after such notice, he may cancel the brand.

14. No brand which has been surrendered or cancelled shall be re-allotted until a period of five years from such surrender or cancellation has elapsed.

15. The Registrar shall, at the end of each quarter in every year, or as soon thereafter as possible, transmit for publication in the *Gazette* a statement, in the form of Schedule "E" hereto, of all brands registered under the Ordinance up to the last day of such quarter.

16. The Registrar shall allot a brand to every public pound already or hereafter to be established, and shall register the same.

The first character of every such brand shall be a diamond, and the second the dominant letter of the magisterial district or sub-district, and the third a numeral, the dominant letter to be placed above the diamond and numeral so as to form a triangle ; and the Poundmaster shall, on sale of any stock impounded therein, brand the same with such brand on the portions and in

the order prescribed in these Regulations, to show that the said brand is the last brand at that time imprinted on such stock; and any Poundmaster who shall fail to comply with the provisions of this section shall on conviction be liable to a fine not exceeding £5.

W. H. MILTON,
Administrator

By command of His Honour the Administrator in Council

P. D. L. FYNN
Acting Treasurer.

SCHEDULE A.

APPLICATION FOR A BRAND

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

To the Deputy Registrar,

Herewith ^{we}
I enclose the prescribed fee of and request
that you will allot and register a brand for the holding or place mentioned in
the Schedule below.

Name of Applicant in full.	Address.	District or Sub-district for which Brand is required.

Date.....

Applicant.

SCHEDULE B.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No.....

.....day of.....

I hereby certify that the brand shown in the diagram at foot hereof was duly registered on the date and as the brand of the person(s) therein set forth in the schedule hereto.

Owner(s)' full Name.	Address.	District for which Brand is registered.	Date of Registration.

Fee paid.....

Diagram of Brand.....

(Signed).....

Registrar of Brands

SCHEDULE C.

MEMORANDUM OF TRANSFER OF BRAND.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

We, ...being the registered owner(s) of the
 I, ...brand set forth in the schedule hereto, do hereby agree to the transfer of the
 same to.....of..... and hereby
 request that the same may be registered accordingly. And we
 I....., the second undersigned, do also hereby agree to the said
 transfer and enclose the fee therefor (..... Shillings).

Witness..... Owner.

Address.....

Witness..... Transferee.

Address.....

Brand.	Name and Address of Registered Owner of Brand.	District where Brand is Registered.	No. of Certificate.	Date of Registration.

SCHEDULE D.

CERTIFICATE OF TRANSFER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

No..... Date.....

This is to certify that the brand shown at the foot hereof was this day
 transferred from..... of
 to..... of.....

Fee paid £..... Dated this..... day of

Registrar of Brands.

Brand.	Transferee's Name and Address.	District where Brand is to be used.	No. of Certificate.	Date of Registration.

SCHEDULE E.

DISTRICT BRANDS REGISTER.

Brands Ordinance, 1900, and Brands Ordinance Amendment Ordinance, 1908.

Name of Registered Owner.	Address.	District for which Brand is Registered.	Particulars of Brand.		
			Brand Allotted.	No. of Certificate.	Date of Registration.

SCHEDULE F.

Brands allotted to different magisterial districts and sub-districts.

Dominant Letter.	District denoted.					Brands Series.
A	Salisbury	..	..	..	..	A and variations. 2 A A A 2
B	Bulawayo	..	..	..	..	B 2 A B A 2
C	Charter	..	..	..	..	C 2 A C A 2
E	Belingwe	..	..	..	..	E 2 A
	(Sub-district of Bulawayo)	..	..	..	..	E A 2
F	Mangwendi	..	..	..	..	F 2 A
	(Sub-district of Salisbury)	..	..	..	..	F A 2
G	Gwelo	..	..	..	..	G 2 A G A 2
H	Hartley	..	..	..	..	H 2 A H A 2
J	Bubi	..	..	..	..	J 2 A
	(Sub-district of Bulawayo)	..	..	..	..	J A 2
K	Wankie	..	..	..	..	K 2 A
	(Sub-district of Bulawayo)	..	..	..	..	K A 2

Dominant Letter.	District denoted.	Brands Series
L	Lomagondi	L and variations.
	(Sub-district of Salisbury)	2 A
		L
		A 2
M	Mazoe	M
	(Sub-district of Salisbury)	2 A
		M
		A 2
N	Bulilima-Mangwe	N
	(Sub-district of Bulawayo)	2 A
		N
		A 2
P	Mafungabusi	P
	(Sub-district of Gwelo)	2 A
		P
		A 2
R	Chibi	R
	(Sub-district of Victoria)	2 A
		R
		A 2
S	Melsetter	S
		2 A
		S
		A 2
T	Tuli	T
		2 A
		T
		A 2
U	Umtali	U
		2 A
		U
		A 2
V	Victoria	V
		2 A
		V
		A 2
W	Gwanda	W
	(Sub-district of Bulawayo)	2 A
		W
		A 2
X	Makoni	X
	(Sub-district of Umtali)	2 A
		X
		A 2

NOTE.—Reserved for distribution (if required), all brands with the numerals as dominants, thus—2 AA to 9 ZZ. Permanently reserved, the letters 0 and I (to be used exclusively as numerals). The letters O, Y and Z are unallotted. The letter D reserved for Government Departments.

No. 51 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 25th March, 1909.

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

UNDER and by virtue of the powers vested in me by the "Brands Ordinance 1900," as amended by the "Brands Ordinance Amendment Ordinance, 1908," I do hereby declare that the following districts have been added to

those shown in Schedule F of Government Notice No. 391 of 1908, and brands allotted as under :—

Dominant Letter or Numeral.	District Denoted.	Brands Series.
Y	Inyanga	Y 2A and variations Y A2
Z	Insiza	Z 2A and variations Z A2
2	Matopo	2 AA and variations 2 ZZ
Q	Selukwe	Q 2A and variations Q A2

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 52 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 25th March, 1909.

CONDITIONS UNDER WHICH GOVERNMENT VETERINARY SURGEONS' SERVICES ARE AVAILABLE TO THE PUBLIC.

1. **O**N and after 1st April, 1909, the services of Government Veterinary Surgeons will be available to the public, free of charge for the following purposes only :—

(1) Attending and giving professional advice in connection with the following diseases, viz. :—Anthrax, Contagious abortion, East Coast Fever, Epizootic Lymphangitis, Foot and Mouth Disease, Farcy, Foot-rot, Heartwater, Glanders, Intestinal parasites amongst sheep and goats, Liver Disease, Lung-sickness, Osteo Porosis, Malarial Catarrhal Fever (blue tongue), Rabies, Redwater, Rinderpest, Scabies, Sponziekte (quarter evil), Swine Fever, and any other diseases which may in future be scheduled in terms of section 3 sub-section 18 of the "Animals Diseases Consolidation Ordinance, 1906." Attending to cases of disease amongst live stock which, though not of a contagious or infectious character, may be of general public importance.

(2) Applying tests in regard to Glanders, Tuberculosis, or any other disease against the introduction or spread of which tests are applied under regulations.

(3) Inoculations against the following diseases —

Horsesickness, Lungsickness, Anthrax, Quarter Evil, Redwater, Malarial Catarrhal Fever (blue tongue). A fee to cover the cost of serum and virus will be charged.

2. The following charges shall be made and payable for services rendered by the Government Veterinary Surgeons in other cases, viz. :—

- | | | | |
|---|---|----|----|
| (1) For every professional visit within three miles of his office or residence | £ | s. | d. |
| | 0 | 5 | 0 |
| (2) For every professional visit beyond such distance.. .. . | 0 | 10 | 6 |
| plus an additional charge of 2s. 6d. per hour whilst engaged in such visits or £2 2s. a day of 24 hours ; | | | |
| (3) For advice given at the Veterinary Surgeon's office, for each animal, per visit | 0 | 2 | 6 |
| (4) The following to be charged in addition to visiting fees :— | | | |
| a. For every examination as to soundness, each | 1 | 1 | 0 |
| b. For castration, horses, each | 1 | 1 | 0 |
| c. „ bulls „ | 0 | 5 | 0 |
| d. „ donkeys „ | 0 | 10 | 6 |
| e. For parturition cases, mares, each | 2 | 2 | 0 |
| f. For parturition cases, cows, each | 1 | 1 | 0 |
| g. For other operations, according to nature, from 5s. to £2 2s. | | | |

3. Double the above fees will be payable for services rendered on Sundays, public holidays, and between the hours of 7 p.m. and 7 a.m. :

4. Applicants for the services of Government veterinary surgeons must at their own cost provide the necessary transport for the conveyance of these officers from, and back to, their residence or nearest railway station.

5. Farmers and owners of stock throughout the country frequently telegraph for a Government veterinary surgeon to be sent to attend an animal which has been taken seriously ill. It is rarely possible to comply with these requests at once, as the veterinary surgeon may be engaged on duty which he cannot leave, or is at such a distance from where his services are required that he can hardly be expected to arrive in time to be of any service in an urgent case. Hence much valuable time is wasted, the owner of the animal is dissatisfied, and the veterinary staff discredited. To obviate this, in all cases where veterinary advice and assistance are required, the owner should telegraph to "Veteran," Salisbury, with prepaid reply, the nature of the complaint that the animal is suffering from, giving as full and accurate a description of the symptoms as possible. This will enable the Chief Veterinary Surgeon to telegraph advice at once and state whether he is able to arrange for veterinary attendance on the case or not, and save valuable time, which is always of importance in acute cases.

6. The services of Government veterinary surgeons will only be available for private work with the consent of such officers, and when such work does not interfere with their official duties, or when the services of a private practitioner are not available.

7. As the arrangement of allowing Government veterinary surgeons to attend to private cases is intended purely for the benefit of farmers and stock-owners who may wish to obtain professional advice, no responsibility whatever will be accepted for any loss of stock, etc., which may result from the negligent treatment or advice, or wilful default, of any Government veterinary surgeon.

8. All fees collected in terms of these Regulations are payable to the Treasury through the local Receiver of Revenue.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 108 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 20th May, 1909.

UNDER and by virtue of the powers in me vested by the "Fencing Ordinance, 1904," it is hereby notified for general information that the provisions of the said Ordinance shall, in terms of sections 3 and 4, Part I., be brought into force and applied to the following area, as from the 1st day of June, 1909.

DESCRIPTION OF AREA.

That portion of the native district of Bubi, Matabeleland, within the following boundaries:—

From the S.W. beacon of Sevui (Vincent's) Farm on the Khami River, along the W. and N. boundaries of this farm, thence along the W. boundaries of Steven's and Rochester Farms to the N.W. beacon of Rochester, thence along the N. boundary to its junction with the Umguzan Block, thence along the W. boundary of this block to the Umgusa River, thence up the latter till it strikes the N.W. boundary of "Galeta's Kraal," thence in a northerly direction along the N.W. border of this farm and the outspan, thence along the N.E. border of this outspan and Shiloh, and the E. boundaries of Shiloh and Paddy's Valley, and the N.E. boundary of Sailor's Hope to the farm Dingaan, along the N. boundaries of Dingaan, Hambagahele, Gravesend Extension and the N.W. boundary of Induba to the Bembesi River, thence along this river to the S.W. beacon of Battlefield Block, thence along that portion of the S. and S.W. boundaries of the native district of Bubi to the S.W. beacon of Sevui Farm.

W. H. MILTON,

Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,

Treasurer.

No. 136 of 1909.

Department of Agriculture,
Administrator's Office,

Salisbury, 1st July, 1909.

FENCING ORDINANCE, 1904.

UNDER and by virtue of the powers in me vested by section 26 of the "Fencing Ordinance, 1904," I do hereby declare that the subjoined Regulations, providing for the erection and closing of gates, shall be applied in any district or area coming under the provisions of the said Ordinance.

1. On and after the "Fencing Ordinance of 1904" becoming operative in any district or area, any owner of land erecting a dividing fence under the provisions of the Ordinance within such area, shall erect swing gates on all existing private or public roads crossed by such fence.
2. The gate and its appurtenances shall be of such size and description as the Civil Commissioner of the district shall fix and determine.
3. A gate shall not be hung on any straining post, but shall be hung on strong posts erected for the purpose, in such a manner as to allow of it being swung evenly on its hinges, clear of the road, and inwards and outwards.
4. Every person or traveller after passing through a gate, shall properly close such gate, according to the provision made for the purpose.
5. No livestock enclosed in a dividing fence shall be allowed to stray through a gate while any person or traveller may be passing through.

6. Any person contravening any of the above Regulations shall be liable to a penalty not exceeding ten pounds for each offence, or in default of payment of the fine imposed, to imprisonment for any period not exceeding one month, with or without hard labour.

F. J. NEWTON,
Acting Administrator.

By command of His Honour the Acting Administrator in Council.

P. D. L. FYNN,
For Treasurer.

No. 115 of 1909.

Administrator's Office,
Salisbury, 3rd June, 1909.

ESTABLISHMENT OF A POUND AT FIGTREE.

UNDER and by virtue of the powers vested in me by section 5 of the "Pounds and Trespasses Ordinance, 1903," I do hereby declare and make known that, at the request of the Civil Commissioner, Bulawayo, a pound has been established on the farm "Leighwoods," near Figtree, in the magisterial district of Bulawayo, and that the said pound shall be available for the public from the 1st day of July, 1909.

W. H. MILTON,
Administrator.

By command of His Honour the Administrator in Council.

F. J. NEWTON,
Treasurer.

No. 127 of 1909.

Department of Agriculture,
Administrator's Office,
Salisbury, 10th June, 1909.

ESTABLISHMENT OF A POUND AT HARTLEY.

UNDER and by virtue of the powers vested in me by section 5 of the "Pounds and Trespasses Ordinance, 1903," I do hereby declare and make known that, at the request of the Civil Commissioner, Hartley, a pound has been established at a place on the commonage of Hartley township adjoining the north-west side of "Stewart's Kopje," in the magisterial district of Hartley, and that the said pound shall be available for the public from the 1st day of July, 1909.

F. J. NEWTON,
Acting Administrator.

By command of His Honour the Acting Administrator in Council.

P. D. L. FYNN,
For Treasurer.

Departmental Notices.

As Assistant Magistrates have not been appointed to all the Districts and Sub-districts to which a series of Brands have been allotted, the registration of Brands in such Districts will be carried out by the Officers enumerated in the following notice, which was published for the information of stock-breeders:

BRANDS ORDINANCE AMENDMENT ORDINANCE, 1908.

With reference to the regulations published under Government Notice No. 391 of 1908, it is hereby notified for public information that the undermentioned Officers are the Deputy Registrars and Registrars of Brands for the Districts or Sub-districts set opposite their names.

Districts and
Sub-districts.

Deputy Registrar.

Bubi	Assistant Magistrate, Inyati.
Bulalima Mangwe	Assistant Magistrate, Tegwani.
Charter... ..	Magistrate, Enkeldoorn.
Chibi	Magistrate, Victoria.
Mafungabusi	Magistrate, Bulawayo.
Makoni... ..	Magistrate, Umtali.
Mangwendi	Registrar of Brands, Salisbury.
Wankie	Magistrate, Bulawayo.
Tuli... ..	Magistrate, Gwanda.

For the information and guidance of Stockowners the following notes and directions are published:—

1. All brands registered under the old system prior to the 7th January, 1909, will continue to be current, except in cases where the registered owners have ceased to use them; all obsolete brands will in due course be cancelled.
2. Printed forms of application for brands have been supplied to every Deputy Registrar of Brands, *i.e.*, to the Magistrates and Assistant Magistrates of the Districts and Sub-districts to which a series of brands have been allotted.

Applicants for brands should fill in the form, and forward, with the registration fee, to the Deputy Registrar of the District for which the brand is required.

On receipt of the application the Deputy Registrar will allot the next brand vacant on the list, and will issue a

Registration Certificate, after which the applicant will be entitled to the exclusive use of the brand.

3. All brands will consist of two letters of the alphabet and a numeral of plain and uniform pattern, and will be in the form of a triangle, the dominant letter of the District forming the apex, and a numeral and letter forming the base, thus for the district of Salisbury the first brand allotted would be "A"

2 A

4. The maximum size of a brand is fixed at three inches in height, and two inches in width; the object of limiting the size of brand is to prevent the use of brands which make an unsightly impression, causing unnecessary pain to the animal, and damage to the hide.

Stockowners are urged to make their brands as small as possible consistent with clearness, and with as fine a burning edge as possible, to insure a sharp, clear impression on the hide.

5. Rules for branding.

These are clearly set forth in Section 10 of the regulations which has been printed on the back of the Registration Certificate for the guidance of owners.

The order of placing the brand as laid down in the regulations must be strictly followed.

The object in prescribing the order in which brands are placed on an animal is to insure that the owner of lost, straying, or stolen stock being readily traced. If brands are placed indiscriminately on an animal which has changed hands frequently, it is not possible to trace the registered owner without considerable delay ensuing, whereas if brands are impressed in proper rotation, the owner of the brand last impressed on the animal can be readily traced.

6. The owners of registered brands have the right to, in addition to imprinting their brands in the order prescribed, place such brand on the ears of animals by punching, tattooing, or ear-rivets.

7. Registered owners of brands have the right to surrender their brands, and brands surrendered will be cancelled. In cases where it is found that registered brands are not being used, the Registrar may call upon the owner to show cause why it should not be cancelled, and if cause is not shown, such brand may be cancelled. No brand which has been surrendered or cancelled can be re-allotted for 5 years from date of cancellation.

8. With a view of ensuring accuracy and uniformity in the making of branding irons, special arrangements will be made with local firms of blacksmiths to supply branding irons at a contract price.

An applicant for a brand may, on depositing the cost of branding iron, receive from the Deputy Registrar a requisition for a branding iron to be supplied by the contractor.

DESTRUCTION OF WILD CARNIVORA, ETC.

It is hereby notified for public information that the rewards for the destruction of wild carnivora, etc., will be paid only on the scale and conditions herein set forth.

2. Rewards will be paid as follows:—

For each Lion	£3	0	0
„ Leopard	1	0	0
„ Cheetah	1	0	0
„ Wild Dog	0	10	0
„ Crocodile, of not less than 3 ft. in length	0	10	0

3. Rewards will be paid to Europeans by the Magistrate or Native Commissioner, and to natives by the Native Commissioner of the district, within three months of the date upon which the animal is killed, on a declaration made in the form of the annexure hereto.

4. In proof of destruction, applicants for rewards will be required to produce and surrender, in the case of Lion, Leopard or Cheetah, the skin with the tail not severed, and in the case of Crocodile or Wild Dog, the unskinned head.

5. The skins and heads of animals for which rewards have been paid shall be the property of the Government, and shall be disposed of in such manner as may be decided on.

GOVERNMENT STALLION FOR PUBLIC STUD.

The Stallion “Robber Knight” has been returned to Bulawayo, where his services for a limited number of mares will be available until further notice, free of charge.

Applications, giving full particulars of the mares to be served, should be addressed to the Veterinary Department, Bulawayo, where further particulars can be obtained.

The owners of mares brought to stud will have to make all necessary arrangements for attendance, stabling, and feeding of their animals, as the Department can take no responsibility whatever.

As the number of mares which can be served is very limited, the Veterinary Officer in charge is instructed to refuse service if any mare submitted is suffering from any hereditary disease, or is of an inferior type.

Pedigree.—"Robber Knight" by "Sir Hugo," *ex* "Fritters" by "St. Simon."

The Chief Veterinary Surgeon requests that all Official Correspondence be addressed to the

CHIEF VETERINARY SURGEON,
BOX 123,
SALISBURY.

Communications referring to various Departmental matters are frequently addressed to him personally, with the result that they remain unopened and unattended to in case he is absent on duty.

TOBACCO SEED.

The following varieties of tobacco seed may now be obtained by planters from this Department at the prices named, which include postage. Orders must be accompanied by remittance.

	per oz.	
	s.	d.
Turkish, Yenedje, Xanthi, Aya Solouk	1	6
Turkish, Cavalla	1	6

TOBACCO SEED BED COVERING.

A large supply of calico for covering tobacco seed is now available. It can be obtained from the Anglo African Trading Company at Salisbury, Bulawayo, and Gwelo. Price 2½d. per square yard.

RHODESIA TURKISH TOBACCO.

The Bulawayo Warehouse asks us to urge upon growers the importance of properly curing their leaf, and to see that the mid-rib is thoroughly dried.

The leaf should preferably be graded and baled "Caloupe" style (*i.e.*, on strings) by the growers on the farm. Where they are unable to do this properly the leaf

should be sent in on strings, in boxes or bales, under very slight pressure.

The leaf should be in good condition as regards moisture, so as to enable it to be handled without breakage.

STRYCHNINE.

Stockowners can obtain a limited quantity of strychnine for the destruction of carnivora at a cost of 3s. 6d. per ounce.

Publications obtained at the Agricultural Department, Salisbury:—

CULTURE OF TOBACCO.

This book, by G. M. Odum, containing the History of the Tobacco Plant from seed to manufacture, can be obtained from this Department. Price 1s., post free 1s. 4d.

“Tree Culture in Southern Rhodesia.” By P. B. S. Wrey, A.M.I.C.E. Price 9d.

“Farm Science.” Issued by the Harvester Co., of America.

A complete file of “The Rhodesian Agricultural Journal” since its commencement; particulars regarding sale of which may be obtained from the Editor.

Copies of “Money in Lucerne” may be obtained from the Agricultural Department, Salisbury, at the price of 1s. each; remittance to accompany order.

MULBERRY CUTTINGS.

Mulberry Cuttings, *f.o.r.* Salisbury 5s. per 100.—Apply, Manager Experimental Nursery, Salisbury.

INQUIRIES.

Farmers are reminded that in all matters relating to agricultural practice, advice is given by the Department in response to inquiries made by them individually.

In particular subjects, such as disease among crops, insect pests and the like, specimens should be sent to the Department, together with as full details as possible.

Advice will be given to farmers who want farm machinery and appliances, seeds, trees, etc.

All communications should be addressed in the first instance to the Director of Agriculture, Salisbury.

NOTICE.

The Manager of the Beira, Mashonaland, and Rhodesia Railways informs us that, on and after the 1st of June, 1909, until further notice, irrigation plant and machinery will be carried at half third class rates, when the consignment is accompanied by a declaration from the consignee or the consignor, as the case may be, that the plant or machinery is actually to be used for irrigation purposes.

DISPOSAL OF SEEDS.

All farmers and others who have surplus supplies of good quality locally grown farm seeds of any description are invited to communicate with the Government Agriculturalist and Botanist, Department of Agriculture, Salisbury, stating what quantities are available for sale, and price, F.O.R. nearest station. In all cases representative samples of the grain must accompany the letter, but need not exceed two ounces in weight.

The Agricultural Department is continually receiving enquiries as to where the seed can be obtained, and it is hoped that by the above means growers of reliable seed may be brought into touch with one another.

It must be clearly understood, however, that beyond recommending sources of supply, the Department cannot take any further part in the transactions.

POISONOUS PLANTS.

It is of great importance that as soon as possible a study should be made of those plants found in Southern Rhodesia which are poisonous or deleterious to small or large stock. Farmers and others who have known or suspected poisonous plants on their property, are requested to communicate with the Government Agriculturalist and Botanist, Department of Agriculture, Salisbury, at the same time forwarding specimens of the plant, including stem, leaves, flowers, and where possible fruit. Any particulars regarding the habits of the plant, the parts of it which are supposed to be poisonous, etc., will be welcomed, and in return the Department will supply all available information regarding the plants.

SOUTHERN RHODESIA FENCING ORDINANCE, 1904.

(Compiled.)

The procedure necessary to obtain the enactment of the fencing ordinance of 1904 briefly stated is as follows. The owners of landed property in any district desirous of having the ordinance brought into operation should first frame a petition in the form set forth below.

PETITION IN TERMS OF SECTION 4 OF THE FENCING ORDINANCE, 1904.

District

Date

To the Director of Agriculture, Salisbury.

Sir,—We, the undersigned, being residents of Southern Rhodesia and the owners of the landed property situated in the District of, Province of as described below, do hereby beg and request that His Honour the Administrator may be pleased, in terms of Section 4 of the Fencing Ordinance of 1904, to put into force and apply the provisions of Part I of the said Ordinance to the undermentioned area.

Description of Area:—

That District, or that portion of the District of (as the case may be) within the following boundaries. From the beacon of farm along the and boundaries of this farm, thence along the boundaries of farms, etc., etc., etc.

Signature.	Residence.	Name or Description of Landed Property owned.

This petition should be signed by at least two thirds of the owners resident in Southern Rhodesia (not necessarily resident on the land they own).

A notification is to be issued in the "Government Gazette," and one or more newspapers (if any) published and circularising within the District at least once a week for three consecutive weeks, on the lines of the following form. If there is no newspaper published in the District the Notice should also appear in the paper published in the nearest District.

NOTICE.

FENCING ORDINANCE, 1904.

Notice is hereby given that it is the intention of owners of landed property situated in the District of as described below, to petition His Honour the Administrator to bring into force and apply the provisions of Part I of the Fencing Ordinance of 1904, to the undermentioned area:—

Description of Area:—

That District, or that portion of the District of (as the case may be) within the following boundaries. From the beacon of the farm along the boundaries of this farm, thence along the boundaries of the farms etc., etc., etc.

Dated at, Signed this day of 1909, for self and Co-petitioners.

As soon as these formalities have been complied with, the petition, accompanied by a copy of the notice and a sketch map of the district or area referred to, should be forwarded under a covering letter to the Director of Agriculture, Salisbury, requesting him to submit to and recommend the same for the consideration of His Honour the Administrator.

The covering letter should state the dates of "Gazette" and newspapers in which the notice appeared, and it should be signed by an owner or agent representing the petitioners to whom all subsequent correspondence on the subject will be addressed by the Director of Agriculture.

When the proposal has received the sanction of His Honour the Administrator, it then becomes competent for any farmer within the area to require his neighbours to

share the cost of fences erected on mutual boundaries. In the case of disagreement as to ways and means, the matter is to be settled by arbitration. In certain cases payments may be made by instalments.

Owners of land adjoining an area on which the fencing Ordinance is duly proclaimed, must contribute towards the cost of fences on that boundary. Special provision exists for the cases of absent owners, tenants, and of tenants with a right to purchase. Adjacent properties are responsible jointly for necessary repairs to their common fences.

The Ordinance does not affect the case of existing fences.

Copies of the Fencing Ordinance No. 18 of 1904 may be obtained from the Controller of Printing and Stationery, Salisbury.

Editorial Notices.

Original subscribers to the *Journal*, who have complete sets of the earlier numbers to dispose of, are requested to communicate with this office, as numerous enquiries for the first and second volumes, now out of print, have been received.

The *Journal* is issued bi-monthly, and the subscription is 5s. per annum, payable in advance. All communications relating thereto should be addressed to the Director of Agriculture, Agricultural Department, Salisbury, and if an answer is required in the pages of the *Journal*, should reach this office not later than the 15th of the month preceding publication. Subscribers are requested to notify immediately the non-delivery of the *Journal*.

Advertisements will be accepted from *bona fide* farmers wishing to effect sale, purchase or exchange of produce, live stock, or farm implements, at a minimum charge of 2s. 6d. per insertion of 20 words. Extra words will be charged for at the rate of 1s. for every ten words.

Applications for Advertisement Rates to be made to J. Kapnek, Sole Advertisement Contractor for "Rhodesian Agricultural Journal," P.O. Box 91, Salisbury and Box 45 Bulawayo.

ADVERTISEMENTS.

Farmer's Advertisements.

PERSIAN Ram Lambs for sale, from pure bred stock imported from Cape Colony. Apply H. E. Light, c/o. Meikle Bros., Salisbury.

FOR SALE.

PERSIAN RAM LAMBS.

A limited number of three quarter bred acclimatised Ram Lambs for disposal, eight months old; £2 each, Marandella Station.—Apply H. Hay Scorrer; Land Settlement Farm, Marandella.

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Orders are being booked for young pure-bred Friesland Bulls bred from pedigree sire and dam.

These Bulls are bred and reared on the Farm Pomona, near Salisbury, a Redwater area, and thus farmers may obtain highly bred animals without the usual risks attending importation and immunising.

Particulars of pedigree and prices will be obtained on application to Messrs. Maclaurin Bros., Salisbury.

FARMERS' AGENCY.

Farms, Plots and Livestock. Agents for Scott Bros.' Carts, Buggies, Spiders, Gigs, Scotch Carts, Trolleys and Harness, all the best. Glennie's Ox and Mule Wagons, Trolleys, Scotch Carts and Wagon Wood. American Gigs, Wheels, Hand Carts, Bee Hives, Bucksails, Harness, Trek Gear, Tools, Implements, McDougall's Dips, Gates, Fencing, Tents.

3" Hand Jumper Drill, complete £15.

P.O. BOX 73; SALISBURY.

ADVERTISEMENTS.

AFRICANDER BULLS.

Three Pure Bred Africander Bulls for Sale, two 4-tooth and one 6-tooth respectively.—R. Bliss, Ayshire.

PERSIAN SHEEP RAMS.

These Rams are all picked from our well-known Longhope Stud; winners of over 100 prizes—Port Elizabeth, Rosebank, and Bloemfontein.

I have now a portion of this stud on my farm, near Penhalonga, Rhodesia, and am open to take orders for Rams now on hand, and also to book for next year. Price, £3 10s. on truck, Umtali.—Apply Douglas Abrahamson, Penhalonga.

E. F. SHEPPY,

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Pure Bred Yorkshire and Berkshire Pigs.
Persian Sheep and Angora Goats.
Milk Cows and Breeding Heifers.
Pairs Scotch Cart Oxen; Span Young Oxen.
Hardy Young Bulls of all breeds.
Mares, Donkeys, Farm Mules.
Trees all descriptions. Seeds all kinds.
Swarms of Bees in Hives complete.
American Mammoth Bronze Turkeys.
Splendid White Leghorn Poultry.
Also Silver and White Wyandottes and Buffs.
Silver Grey Dorkings and Plymouth Rocks.
First-Class Pekin and Indian Runner Ducks.
Pigeons all breeds and Good Canaries.
Fox and Irish Terriers and other Puppies.

**E. F. SHEPPY, Mount Pleasant,
P.O. Box 73, SALISBURY.**

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Prices from 1s. 6d. to 4/- per Tree.

According to size of Tree and Quantity ordered.

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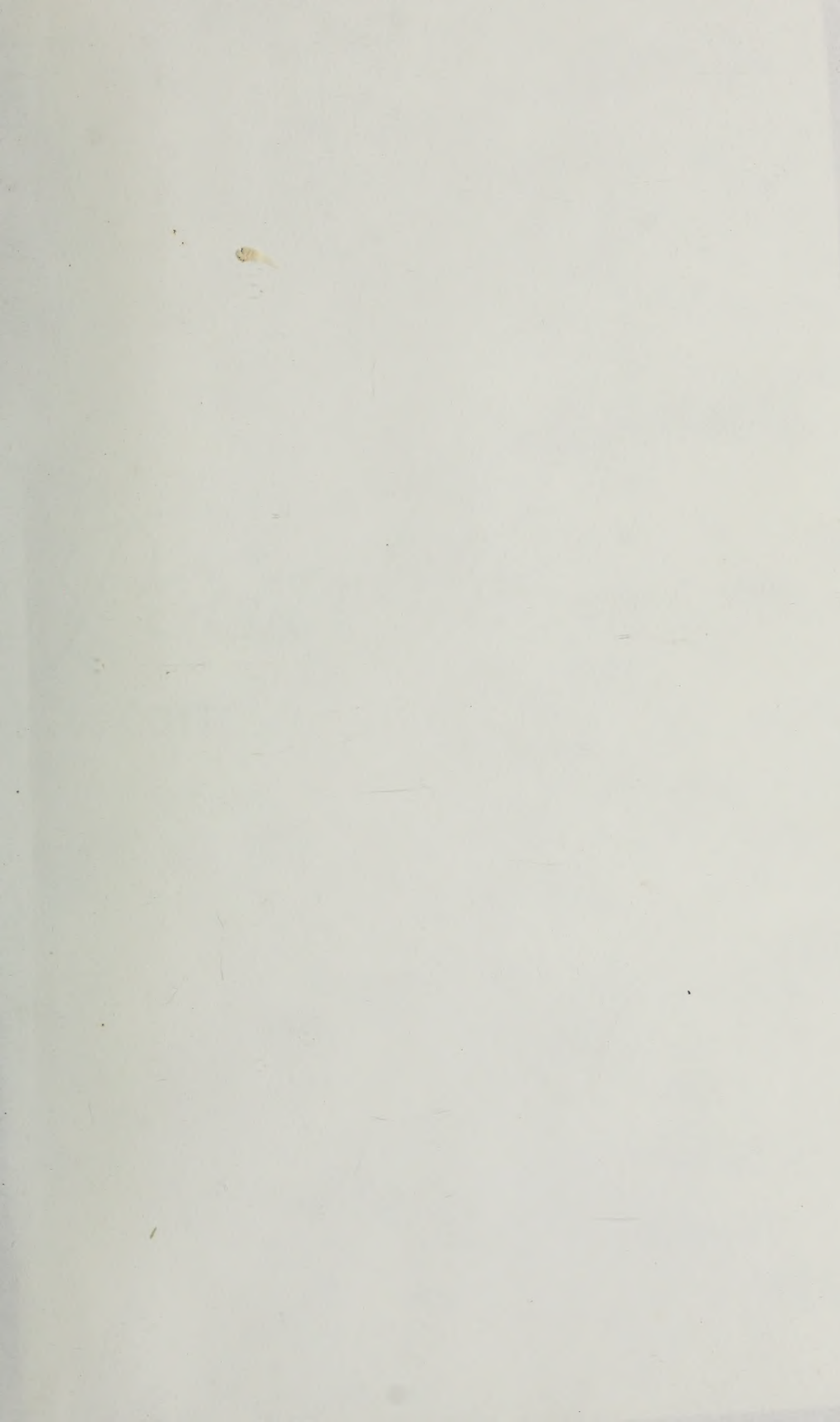
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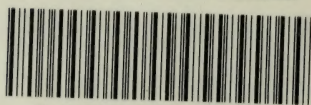
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